

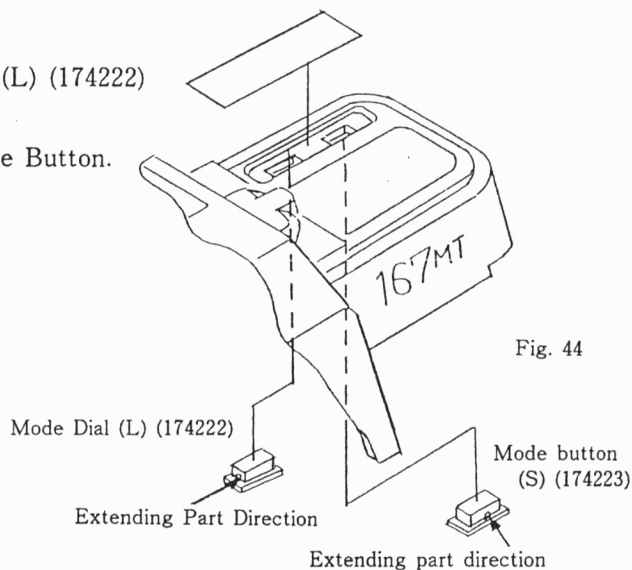
C Procedure for Assembly and Adjustment

C REASSEMBLING AND ADJUSTING PROCEDURES

C-1 Reassembly of Top Cover

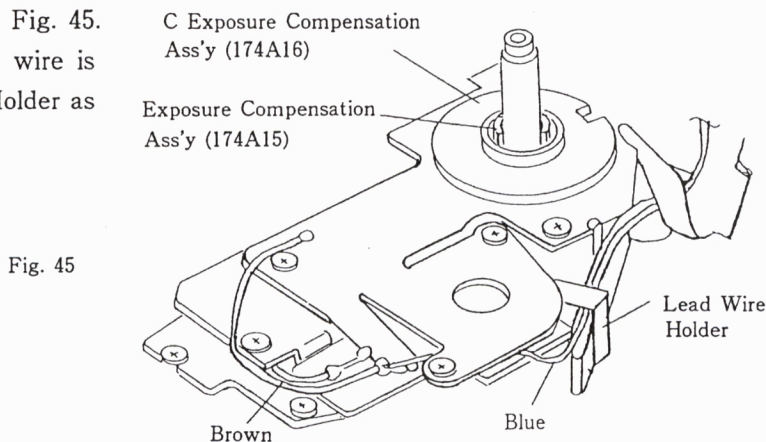
- 1) Place a stick tape on the Mode Button (L) (174222) and Mode Button (S) (174223).

※ Please note the direction of the Mode Button.

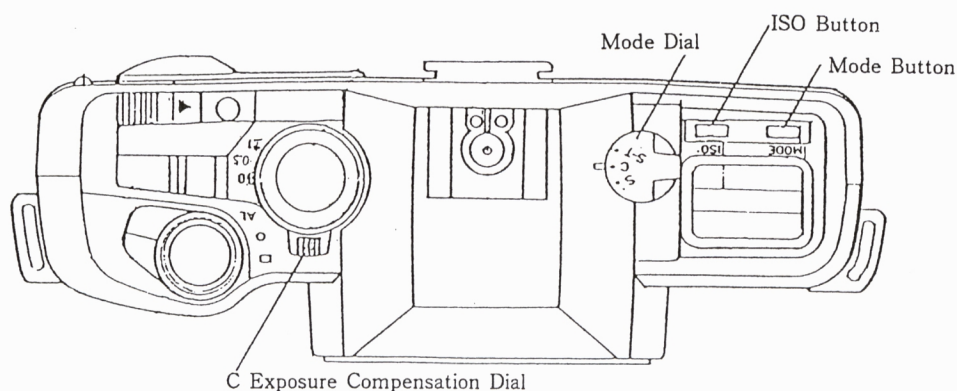


- 2) Wipe the pattern on the top of the Base Plate with Ethyl alcohol then install the C Exposure Compensation Ass'y (174A16), and the Exposure Compensation Ass'y (174A15) on as shown in Fig. 45.

- 3) Make sure that the lead wire is held by the Lead Wire Holder as shown in Fig. 45.



- 4) Before attaching Top Cover, Mode Dial Set is C position and the C Exposure Compensation Dial is 0 position.



C-2 Reassembly and Adjustment of the S Base Plate Ass'y

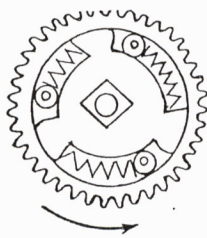
C-2-1 Reassembly of Clutch Gear

1) Reassembly of Eluth Gear with Clutch Roller as shown in Fig. 47.

[Caution]

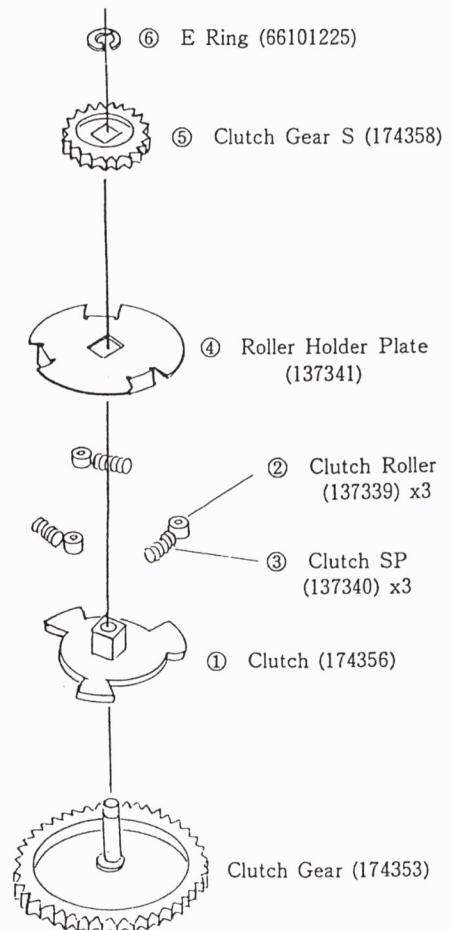
Do not lubricate any oil into the cluth gear. The Clutch gear, Clutch, Clutch Roller, and Roller Holder Plate are covered with a special oil barrier liquid.

(Inspection after assembling)



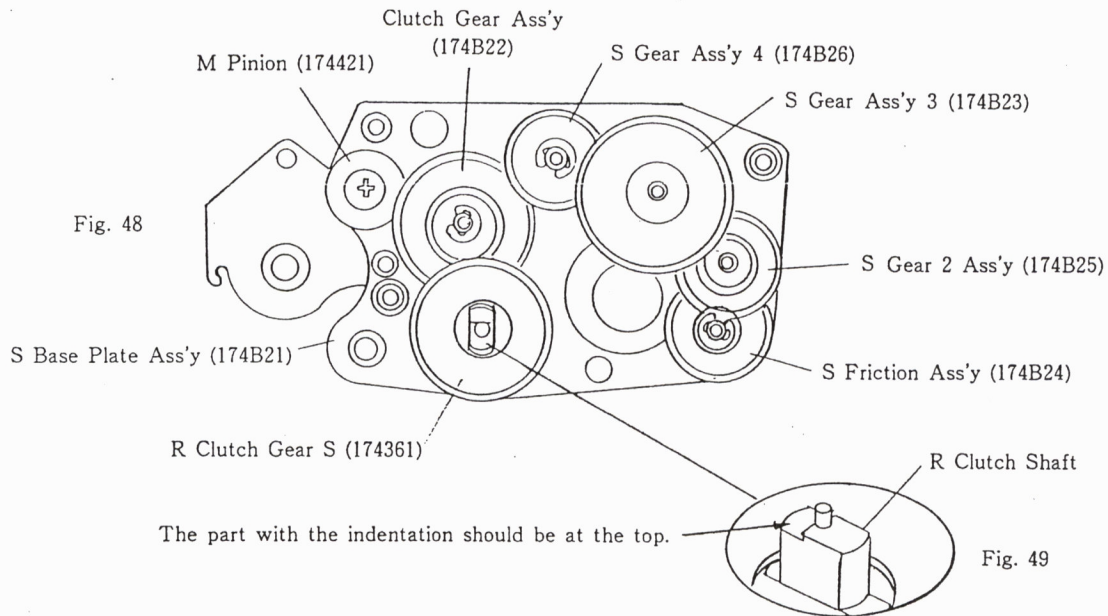
[Check]

- a) Rotate Clutch Gear and confirm that it rotates smoothly in on direction and does not rotate in the other direction.



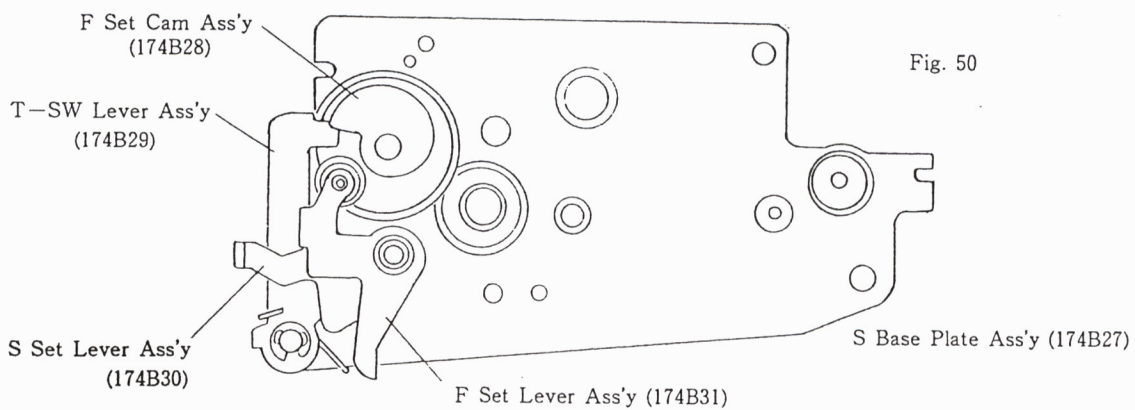
C-2-2 Reassembly of the S Base Plate

- 1) Assemble each of the gears as shown in Fig. 48.



- ※ Turn and set the indented part of R Clutch Shaft toward front in position and then fit the R Gear S as shown in Fig. 49.

- 2) Assembly the Set Cam as shown in Fig. 50.



- ※ Pay close attention to the position of the S Set lever Ass'y (174B31) and the F Set Lever Ass'y (174B31).

- 3) Assemble the S Base Plate (L) (174B29) on the top of the S Base Plate (S) (174B21).

- 4) Tighten the S Base Plate Set Screws (63913526) x2 and the R Lever Shaft (174426).
- 5) Tighten the F Set Lever Plate Set Screw (61803526).
- 6) Install the Friction SP (174379) to the slot of Spool.
- 7) Turn the S Base Ass'y (174A04) upside down and insert Sprocket G (174370) and install to the body.

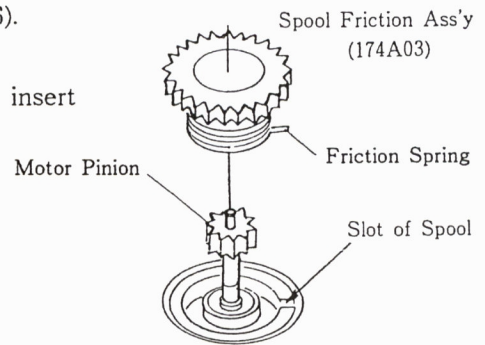


Fig. 51

[Adjusting engagement of Sprocket G]

- a) Engaged the F Set Cam with the T-SW Lever.
- b) The R Clutch Gear should turn in the direction of the arrow to avoid any play.
- c) The Sprocket G should be in the same direction as Figure 52.

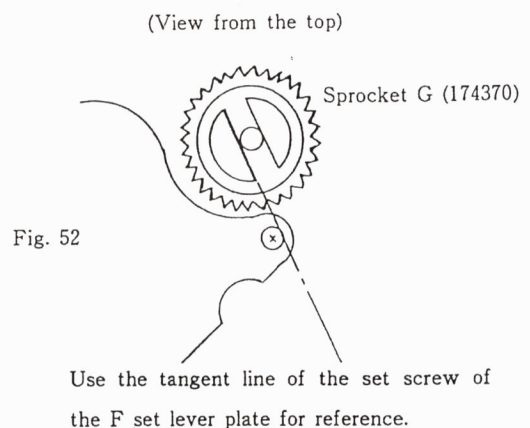
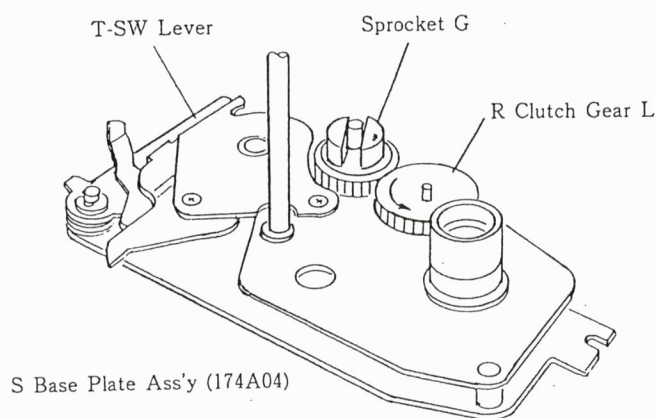


Fig. 52

- ※ If the Sprocket G is not placed in the same way as shown in Fig. 52, reverse upside-down the Sprocket G or replace other Sprocket G see Fig. 53, 54. To set a perforation in right position.

[Distinguish at Sprocket G]

Sprocket G (174370)

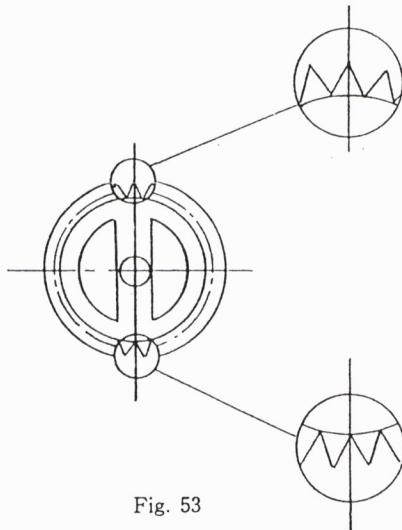


Fig. 53

Sprocket G (A) (174369)

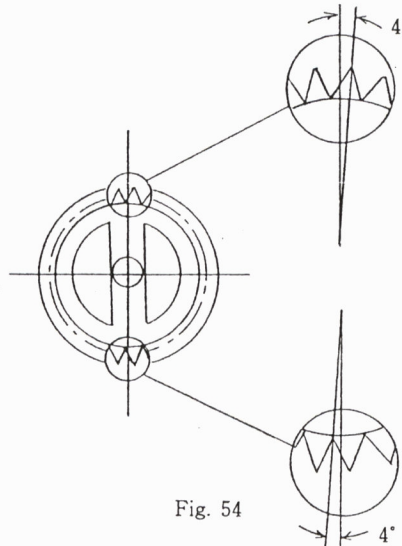


Fig. 54

- 8) Making sure that the Sprocket G (174370) does not fall, install the S Base Plate Ass'y (174A04) at a slanted angle to the body.
- 9) Tighten the S Base Plate Set Screws. (61813026) x2, (63913022) (see Fig. 17)

[Confirming the perforation position]

Place a film (non-exposed and developed Black and White Film) on the teeth of Sprocket and check the gap between the film and the picture frame.

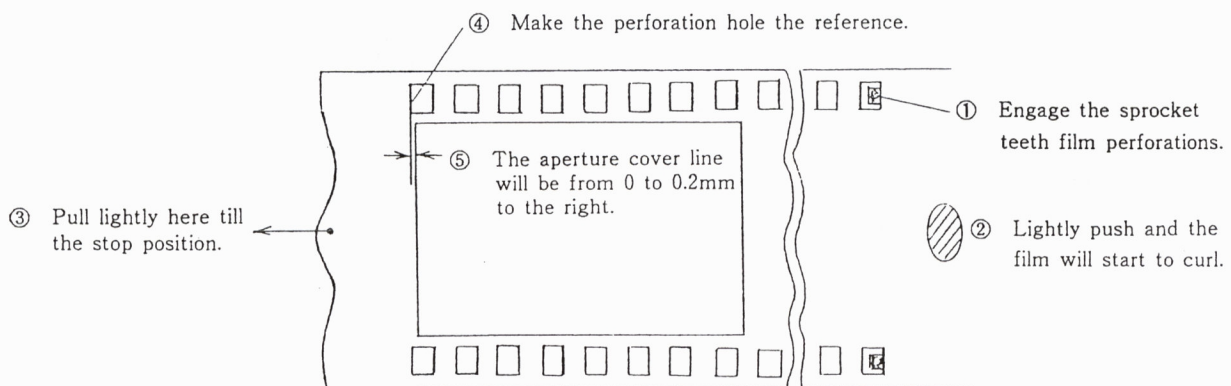


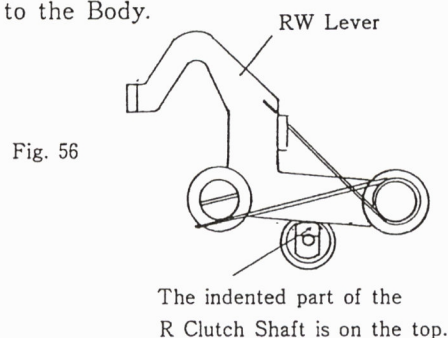
Fig. 55

[Confirming the R clutch shaft position and return]

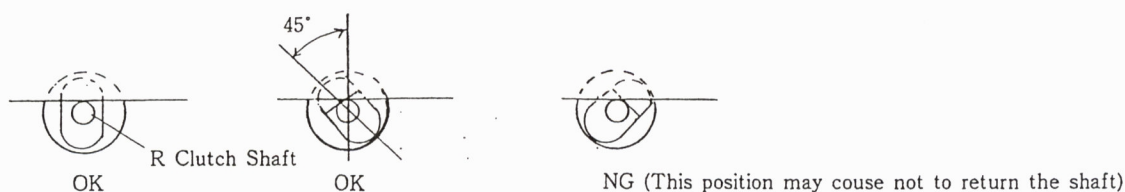
1) R Clutch Shaft position

The position where the F Set Cam is stopped by the T-SW Lever.

※ Check after assemble the S . Base Plate Ass'y to the Body.



※ When the R Clutch Shaft is pushed

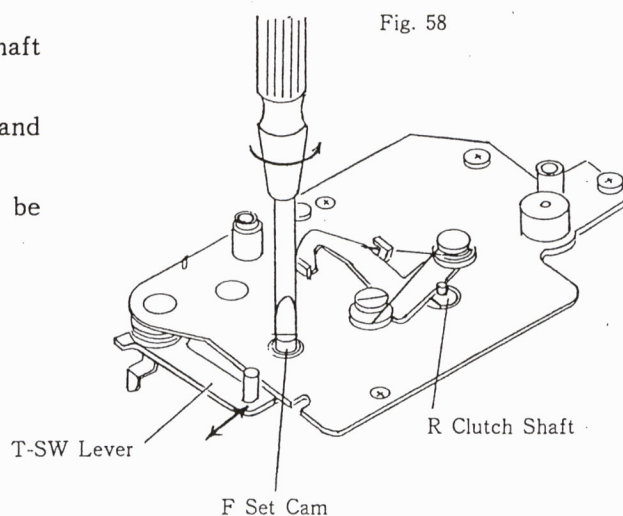


2) The confirmation of the return of the R Clutch Shaft.

- a) Push the R Clutch Shaft.
- b) Remove the T-SW Lever stop and turn the F Set Cam in the direction shown with a screwdriver.
- c) Make sure that the Spool and the Sprocket do not turn . (If they turn, the Clutch cannot return)
- d) The R Clutch Shaft return so that the T-SW Lever hooks the F Set Cam

[Note]

- If two clicks are heard, the R clutch shaft returned.
- Check if the F set cam turns quietly and quickly, each 3 times.
- If there is no sound, then it should be disassembled and rechecked.



[Adjustment of the Rewind SW]

When the R Clutch Shaft is pushed

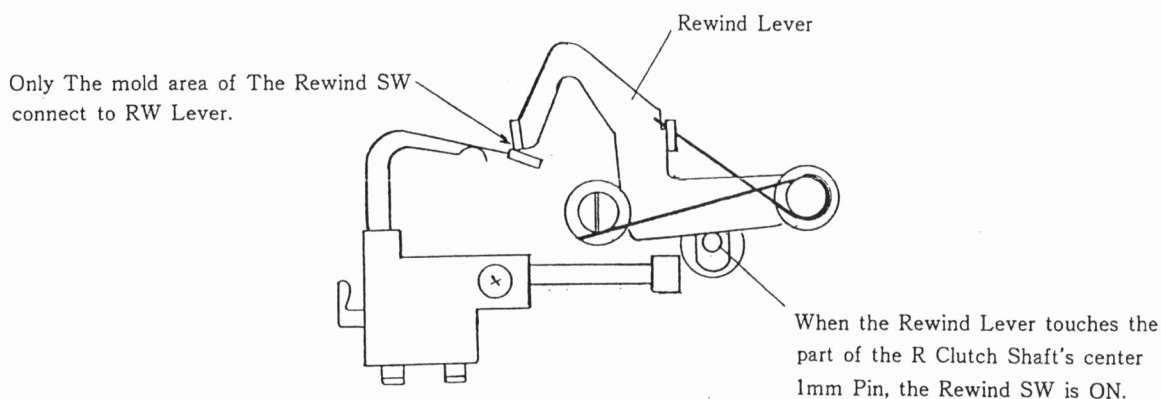


Fig. 59

※ If RW-SW ON before the Clutch is OFF, the rewind motor begins to start and the film will be break

[Adjustment of T-SW (Timing-SW)]

Shutter set and waiting for release

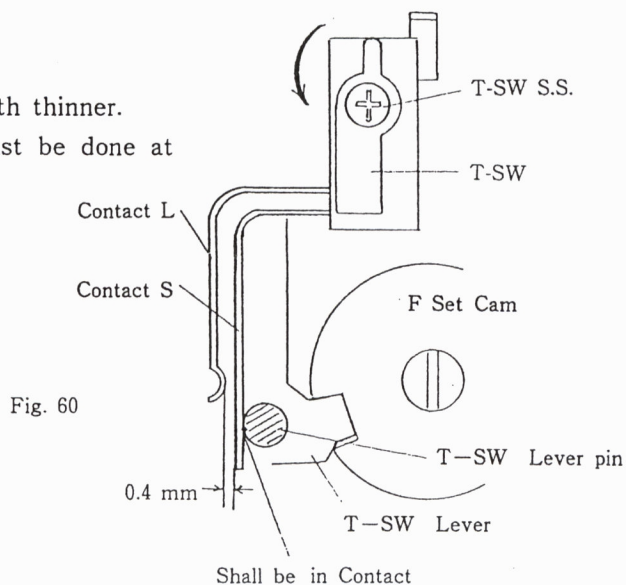
(After one Flame wind completed the motor is stopped.)

- 1) Turn the T-SW until the Contact S comes into contact with the T-SW Lever Pin. Then tighten the T-SW Screws.

If there is malcontact, Bent the Contact S until it makes contact

[Note]

- a) Wide the contact parts of the Contact with thinner.
- b) The Contact bending for adjustment must be done at base part of the Contact.



[Condition during winding]

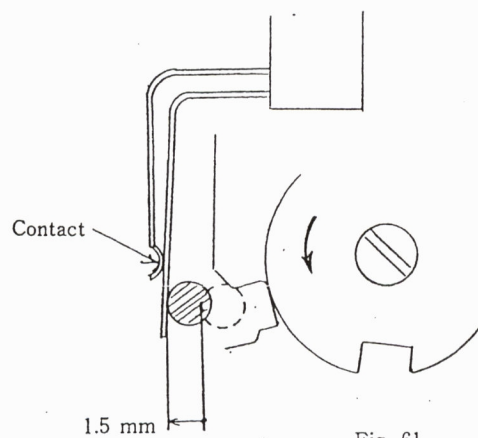


Fig. 61

During winding the T-SW must be ON.

Defect causes

- When the T-SW is not ON, the Film will auto-stop during the winding (the mirror remaining up) and the M LCD Displays 2 HZ error sing.
- The mirror does motion-up in stages.

[Position of the T-SW at the moment after shutter release]

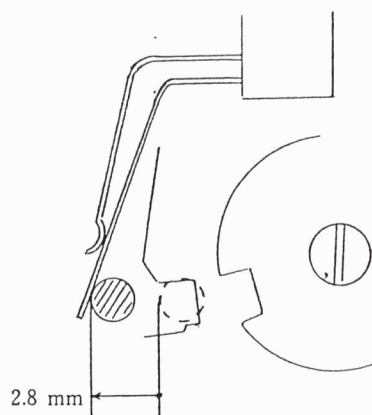
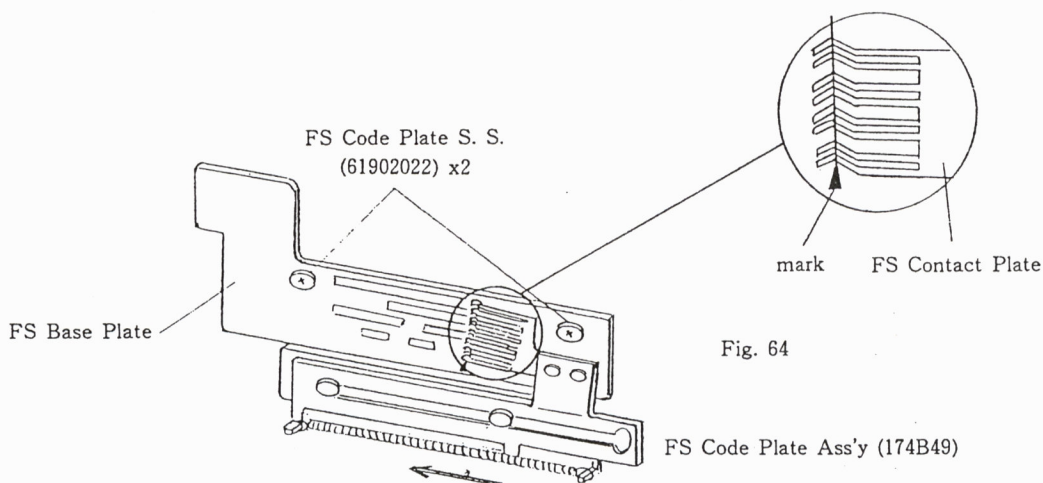


Fig. 62

C-3 Reassembly and Adjustment of Mirror Box

C-3-1 Adjustment of the Position of the FS Code Plate Ass'y.

- 1) Loosening two FS Code Plate Set Screws (61902022) x2.
- 2) Align the notched of FS Code Contact with the triangular index (▲) on the FS Base Plate.
- 3) Tighten two FS Code Plate Set Screws.
- 4) Make sure align the notched of FS Code Contact with the triangular index (▲) on the FS Base Plate when the FS Code Plate Ass'y should normally be returned smooth under spring forces.

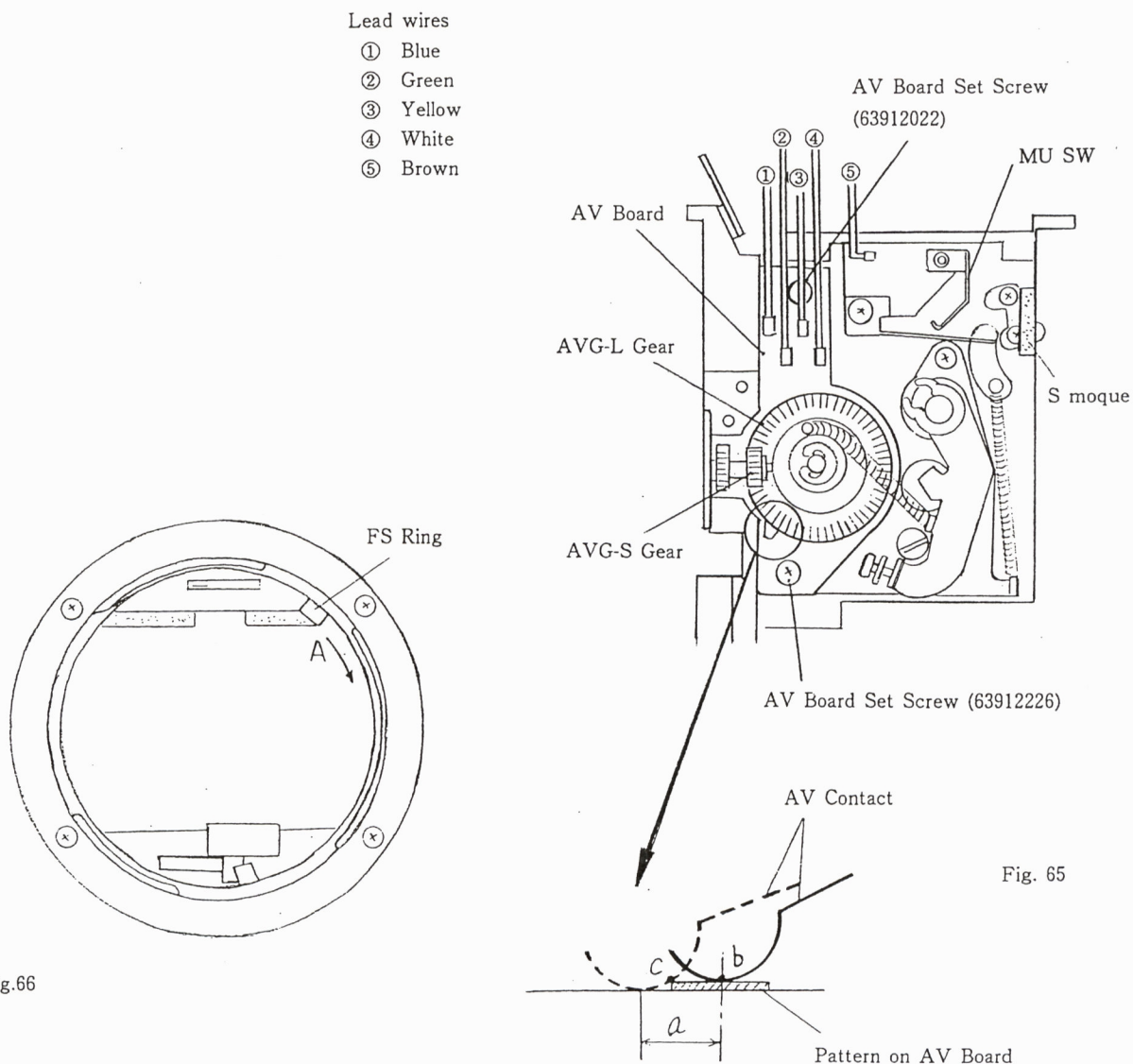


[Note]

- a) Do not touch the FS Base Plate's pattern or the FS Contact directly.
- b) Clean with thinner.
- c) Because the FS Contact bends easily, care must be taken when handling.

C-3-2 Position Adjustment of AV Circuit Board (aperture value code)

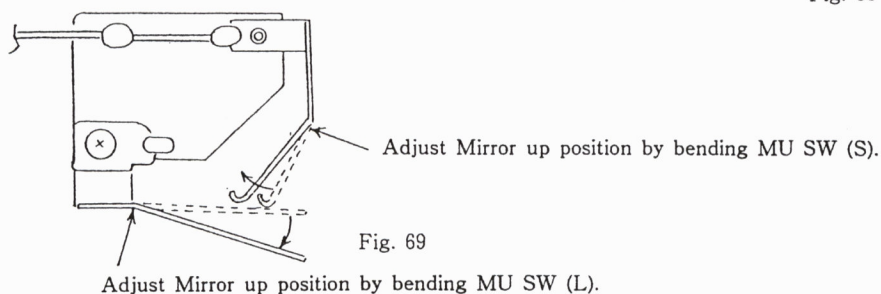
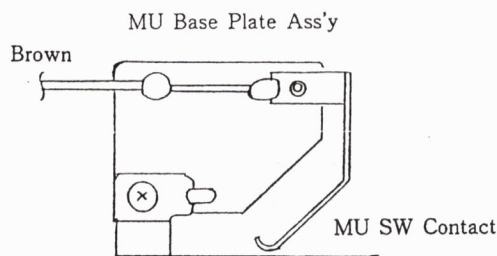
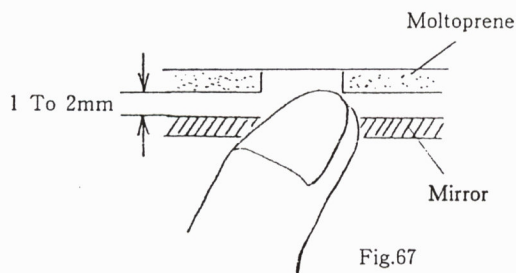
- 1) Install the Planar Fl. 4/50 lens on the body mount and set the aperture to Fl. 4 (open).
- 2) Engage the AVG-L gear with the AVG-S Gear so that the AV contact is positioned as shown in Fig. 65. Then tighten the AV board Set Screws (63912022) and (63912226).
- 3) When the FS Ring is turned to the open (Fl. 4) position, the AV Contact must be positioned as shown in Fig. 65.
- 4) Remove the lens and turn the FS Ring to check for smooth turn without any resistance.



The AV Board must be positioned within the range between *c* (dot-lined AV Contact touching the pattern at *c*) and *b* (center of the pattern).

C-3-3 Adjustment MU-SW (Mirror up SW)

There is a 1 ~ 2mm gap between the mirror's reflective surface and the Moltoprene. Adjustment is made by bending the MU-SW in contact with it through the MU-SW Contact.

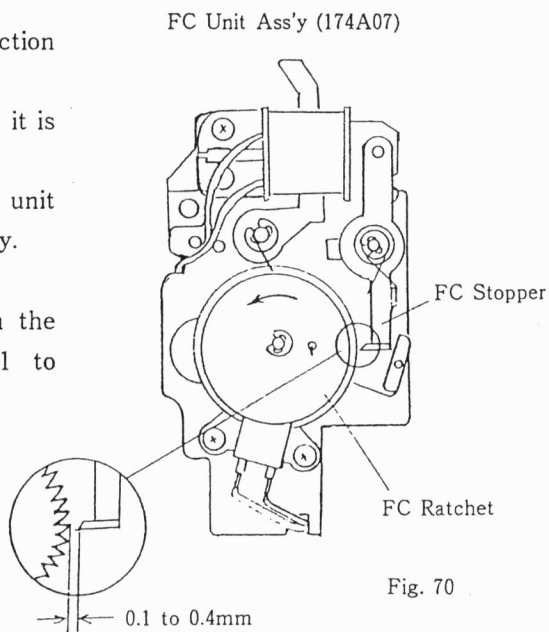


※ Regular line indicates normal condition. Dotted line indicates the mirror up position.

C-3-4 Reassembly the FC Unit Ass'y

- 1) Turn the FC Ratchet in the FC Slit SP direction (arrow direction) for about one turn.
- 2) Let the FC Ratchet loose (natural position) and it is stopped by the FC Stopper.
- 3) By tightening the FC Unit Screws, the FC unit Ass'y (174A07) is set with the Mirror Box Ass'y.

※ When the F-Mg is OFF, the gap between the FC Ratchet and the FC Stopper is 0.1 to 0.4mm.



C-3-5 Reassembly of Mirror Box Ass'y

※ Before mounting the Mirror Box Ass'y, confirm the following conditions :

- a) MU Base Plate Ass'y
 - Spring is in the correct position.
 - The S Lever Hook is unhooked.
- b) Shutter
 - Shutter Set Cam is down as in Fig 72.
- c) S Base Plate Ass'y
 - T-SW Lever is into the groove of F Set Cam as shown in Fig 72.

[Note]

- a) When inserting the Mirror Box Ass'y, be careful not to cut the DX FPC.
- b) Be sure that the M Gear-2 (174C54) is sets M Base Plate Ass'y (L)

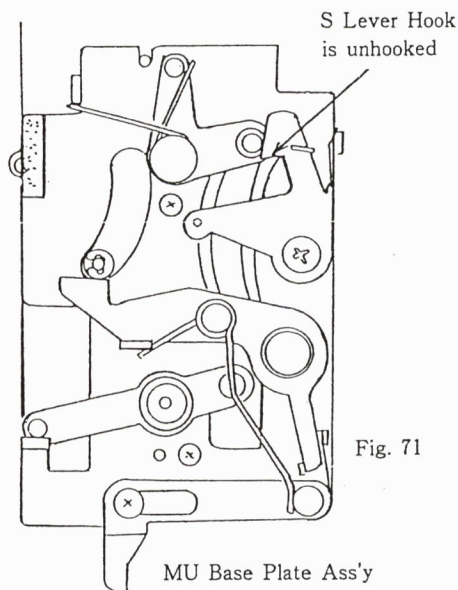


Fig. 71

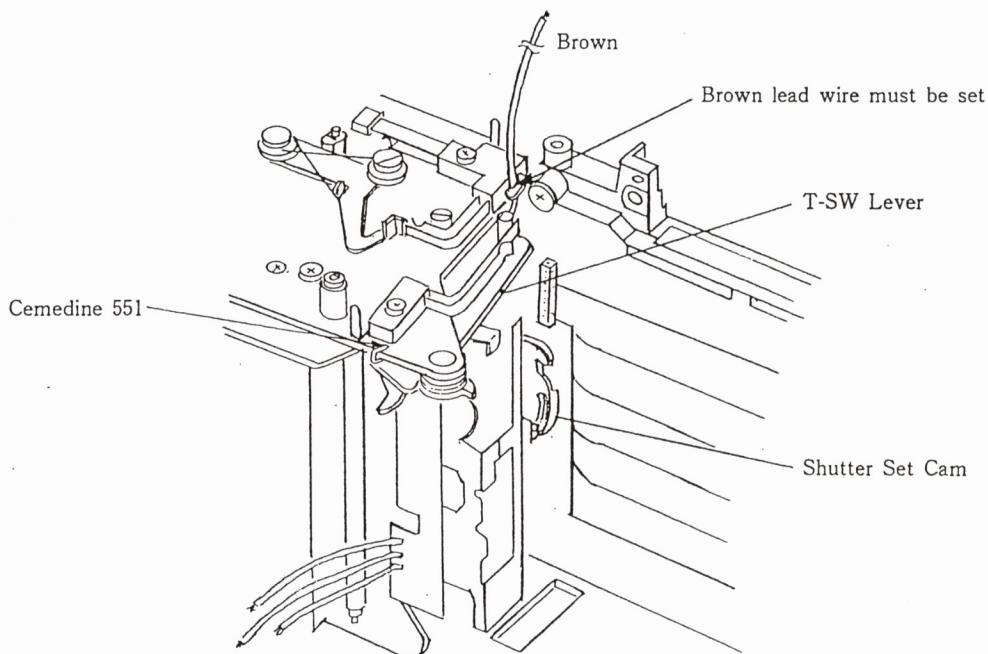


Fig. 72

C-4 Finder adjustment

C-4-1 Position of the Finder Display Adjustment

- 1) While looking through the viewfinder, the Finder Display in view as show in Fig. 73 and adjust the adjuster position by turning with a minus screwdriver.

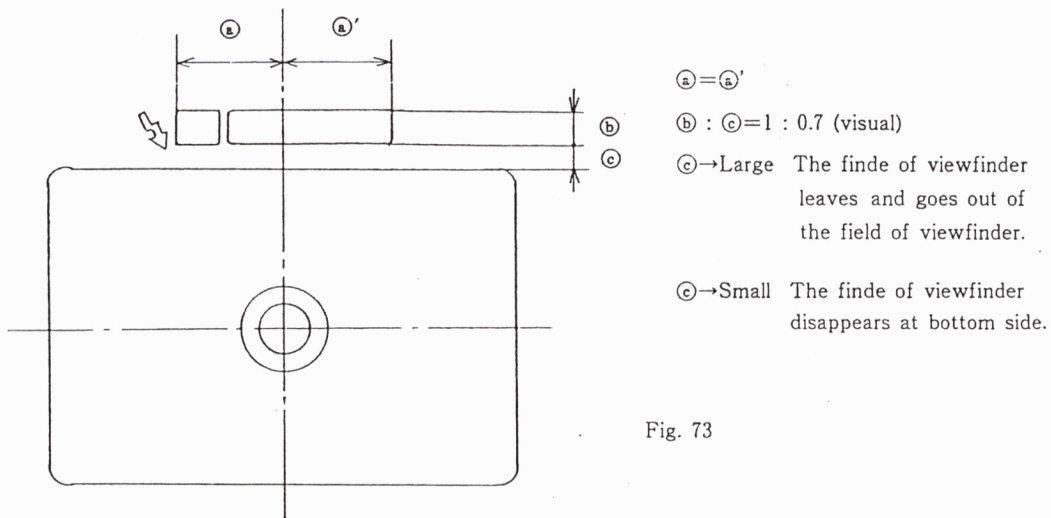


Fig. 73

※ The Adjuster must be locked with Cemedine 551 adhesive after adjustment.

- 2) Loosen the F LCD Holder Set screws (63903526) x2 and adjust by moving the F LCD Assembly to the left and right and tighten the F LCD Holder Set Screws. After adjustment Set Screws must be locked with Cemedine 551 adhesive.

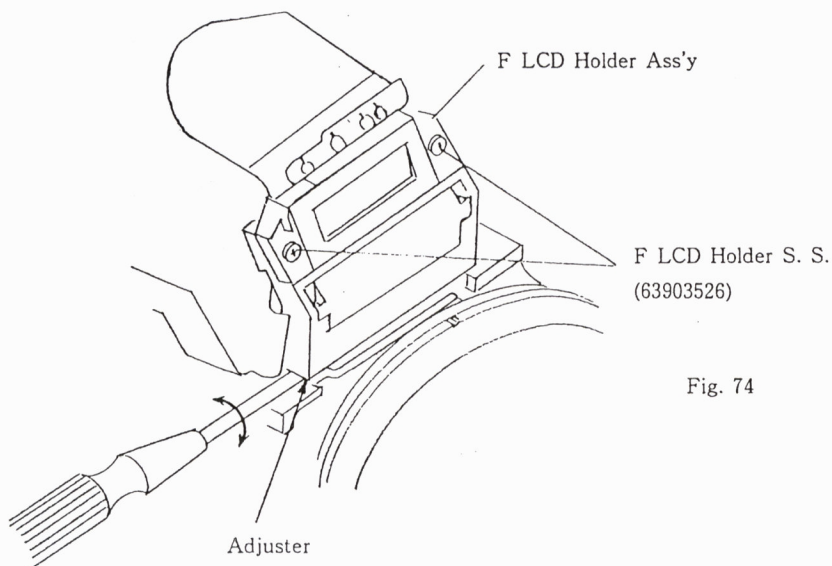


Fig. 74

C-4-2 Finder Focus Adjustment

Finder focus error can be determined by the positions of infinity (∞) symbol and index line on the lens in use.

When the finder focus error is out of focus. Replace the 4 Focusing Adjustment Washers that are under the Penta Holder Assembly. (see Fig. 32)

Six different thickness of Focusing Adjustment washers are available, therefore, select the proper one.

1) Rough adjustment of finder focus

- ① When the focusing ring is turned and correct focus cannot be obtained at infinity, the finder-back is too long. In this case reduce (lower) the position of the focusing screen.
- ② When correct focus can be obtained when the focusing ring is turned to a position before infinity, the finder-back is too short. In this case, increase (raise) the position of the focusing screen.

2) Fine adjustment of the finder focus

- When the finder focus error is within the " $\pm 1/4$ " range (Fig. 75) adjust by turning the 45° mirror adjustment screw as shown in (Fig. 76). This adjustment can be performed from right side of the Mirror Box by removing the Front Cover. The screws should not be turned more than $3/4$ of a revolution.
- After adjusting the 45° mirror adjustment screw, operate the shutter release several times, and then confirm the focus once more, and lock the 45° Mirror adjustment screw with Cemedine 551.

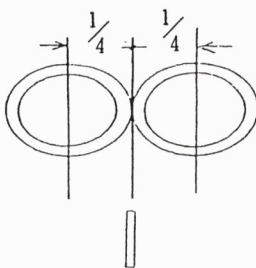


Fig. 75

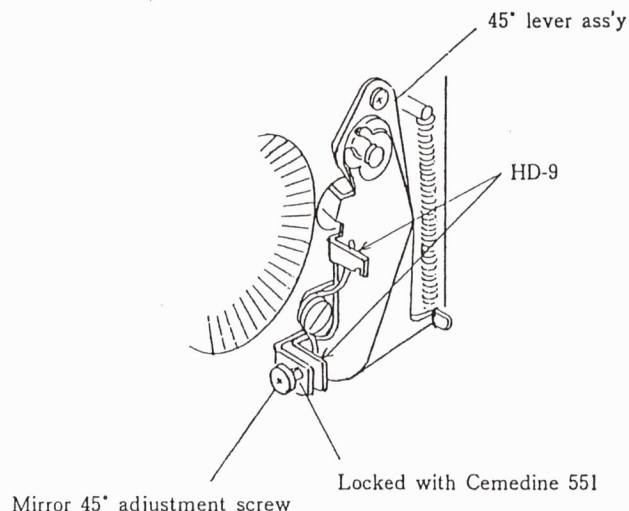


Fig. 76

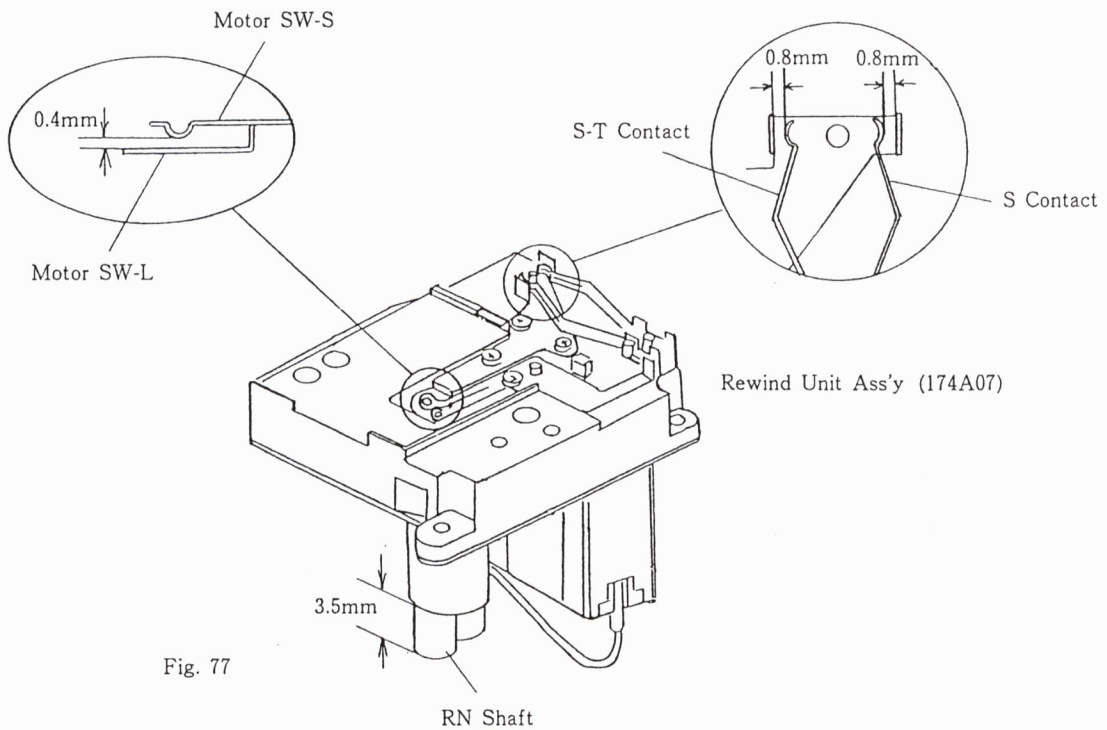
C-5 Mode SW and Motor SW Adjustment

C-5-1 Mode SW Adjustment

- 1) S (single) Contact and S-T (self-timer) Contact should have a gap of $0.8 \pm 0.3\text{mm}$.

C-5-2 Motor SW Adjustment

- 1) When the RM Shaft is up, the switch is ON.
- 2) When the RM Shaft is down, the gap should be $0.4 \pm 0.2\text{mm}$.

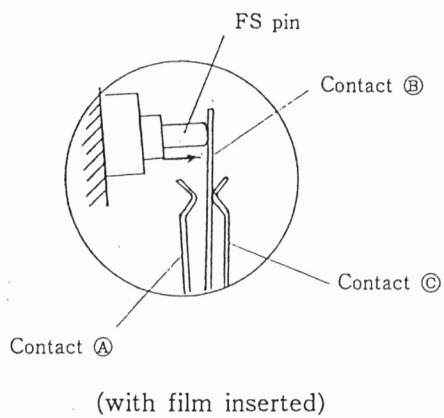
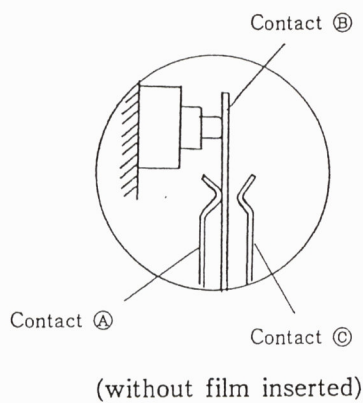
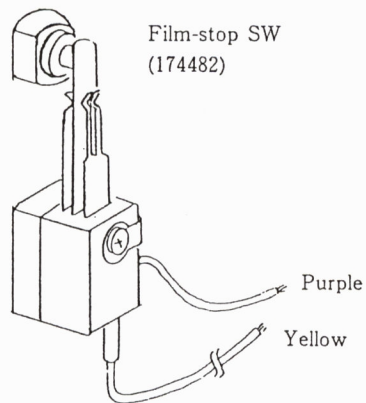


※ Diagram showing when the RM Shaft is down.

C-6 Film-stop Adjustment SW

C-6-1 Film-stop SW Adjustment

- 1) Without film in the body, have Contact ① contact with Contact ②. At the same time, there should be out of contact between Contact ② and ③.
- 2) With film in the body, Contact ② come in contact with Contact ③. At the same time, there should be out of contact between Contact ① and ②.



C-7 Spot point Adjustment

C-7-1 Adjusting the spot point

- 1) Make a 6ø hole in a black plastic tape.
- 2) Tape the black plastic tape to the bottom of a Matte Screen.
 - * There should be no tape at the corners of the Matte Screen.

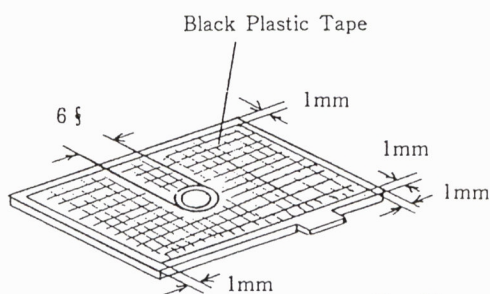


Fig. 79

- 3) Without scratching it remove the frennel lens from the camera and replace it with the frennel lens with the black plastic tape.
- 4) Mount a F1.4/50mm lens to the camera. Set the lens, F1.4.
- 5) Place the camera in front of a 60W lamp.
 - * Reading Value is effected by position between lamp and camera.

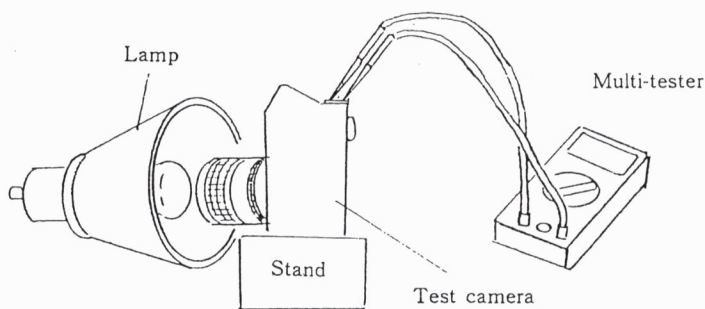


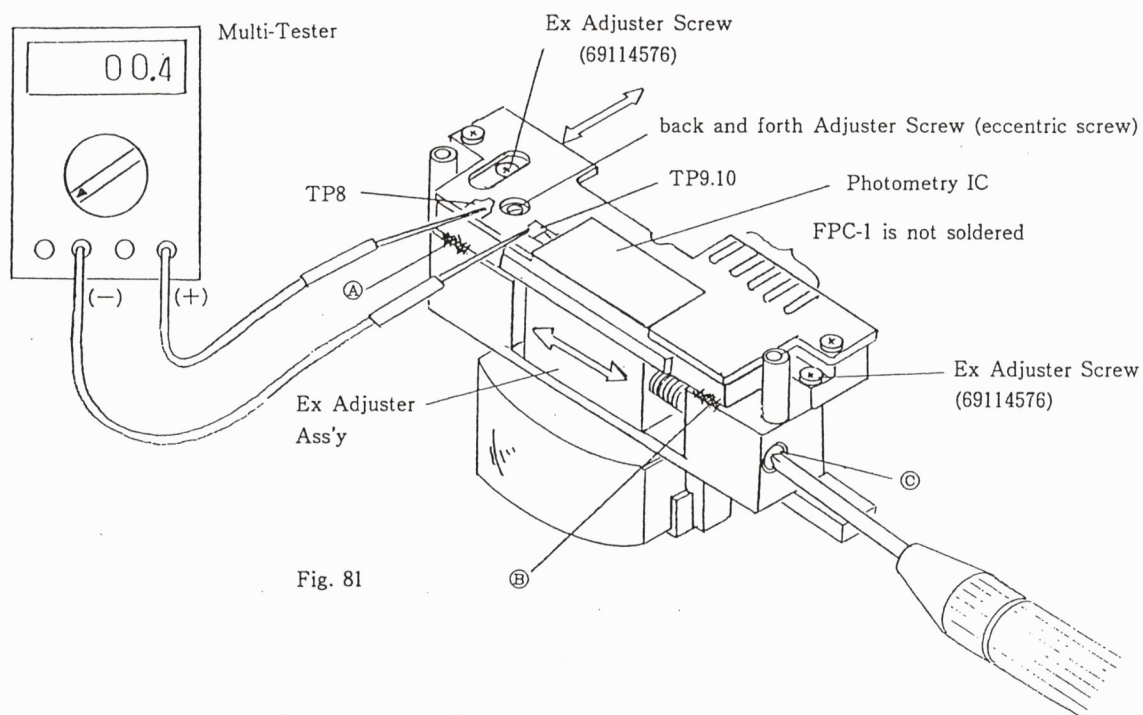
Fig. 80

- 6) Connect the anode side of the Photometry IC to the multi-tester's plus terminal. and the cathode of the Photometry IC to the minus terminal.
- 7) Adjust the Ex prism to the position of maximum electric current between the TP8 and TP9. 10.
 - * Many factors influence the maximum current value. It should be around 0.3 to 0.5 μ A.
- 8) Using a plus screwdriver, move the Ex Adjuster left and right to get the maximum current. (see Fig 81)
- 9) Loosen the 2 screws of the Ex Adjuster Base.

Turn the back and forth Ex adjuster screw (eccentric screw) (174-253) to get the maximum current value.

10) Tighten the Ex adjuster Base screws. (69114576)


* When the adjustment is finished, apply Cemedine 551 to the back and forth Adjustment Screw and the Points ①, ②, and ③ in Fig 81.



C-8 Handling and forming of the FPC and lead wires

C-8-1 The forming of the FPC-2 Ass'y

1) The forming of the FPC-2 Ass'y is shown in Fig. 82.

*  This indicates the area of the FPC that to be folded.

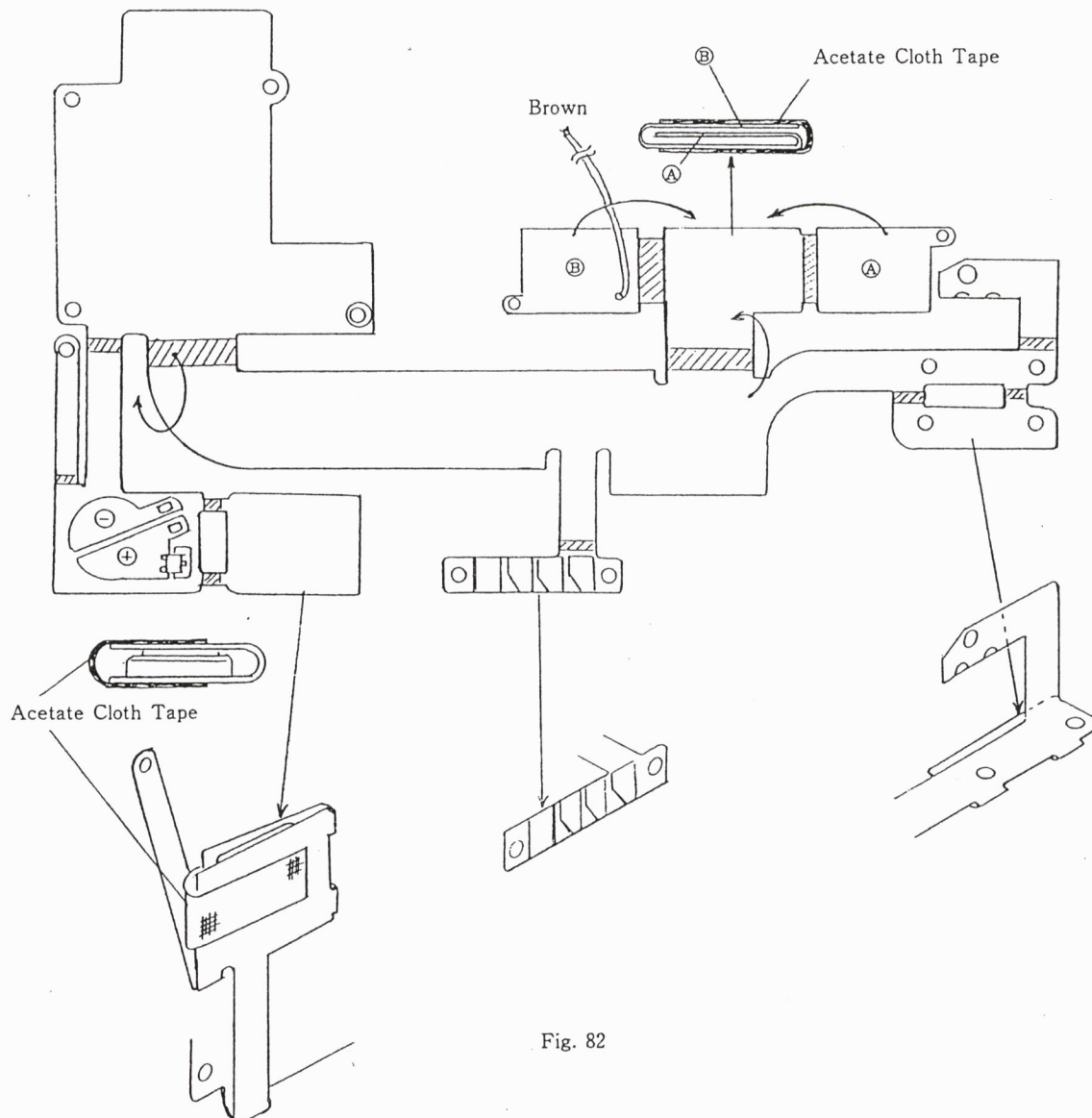
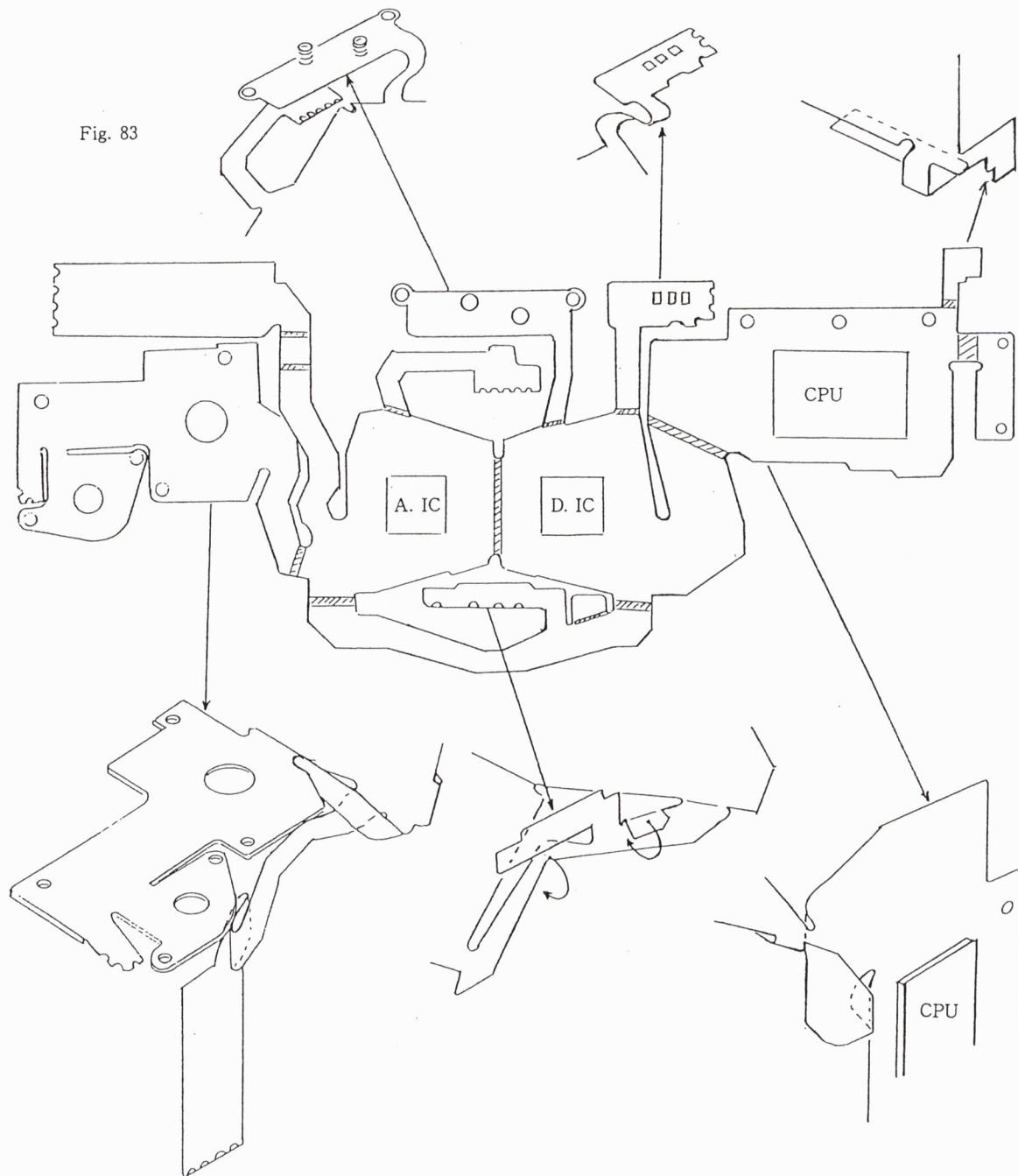


Fig. 82

C-8-2 The forming of the FPC-1 Ass'y

1) The FPC-1 Ass'y is formed as shown in Fig. 83.

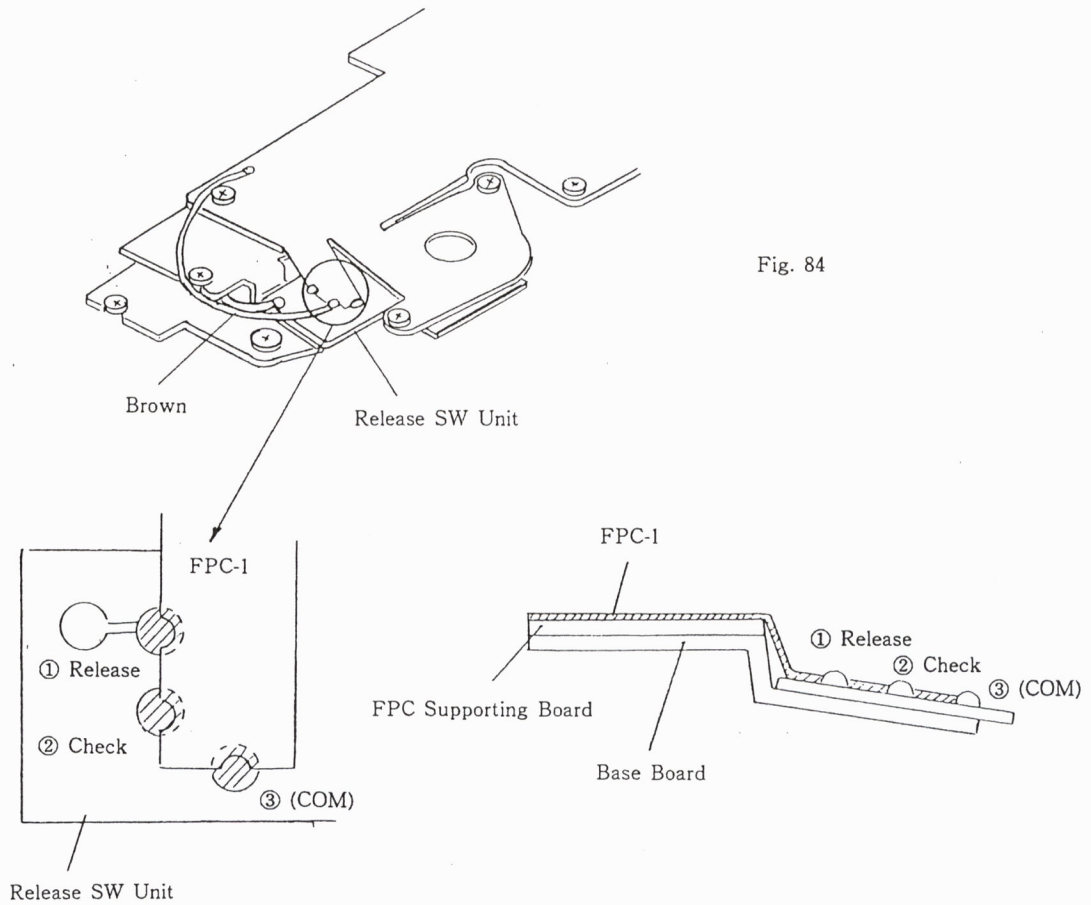
This indicates the area where the FPC to be folded.



2) Soldering of the FPC-1 and the Release SW Unit


The soldering of the FPC-1 and the Release SW Unit is done in the order indicated below :

① Release → ② Check → ③ (COM)



C-8-3 Forming of the LCD Ass'y

1) The LCD Ass'y is formed as shown in Fig. 85.

*  This are indicates the area where the FPC to be folded.

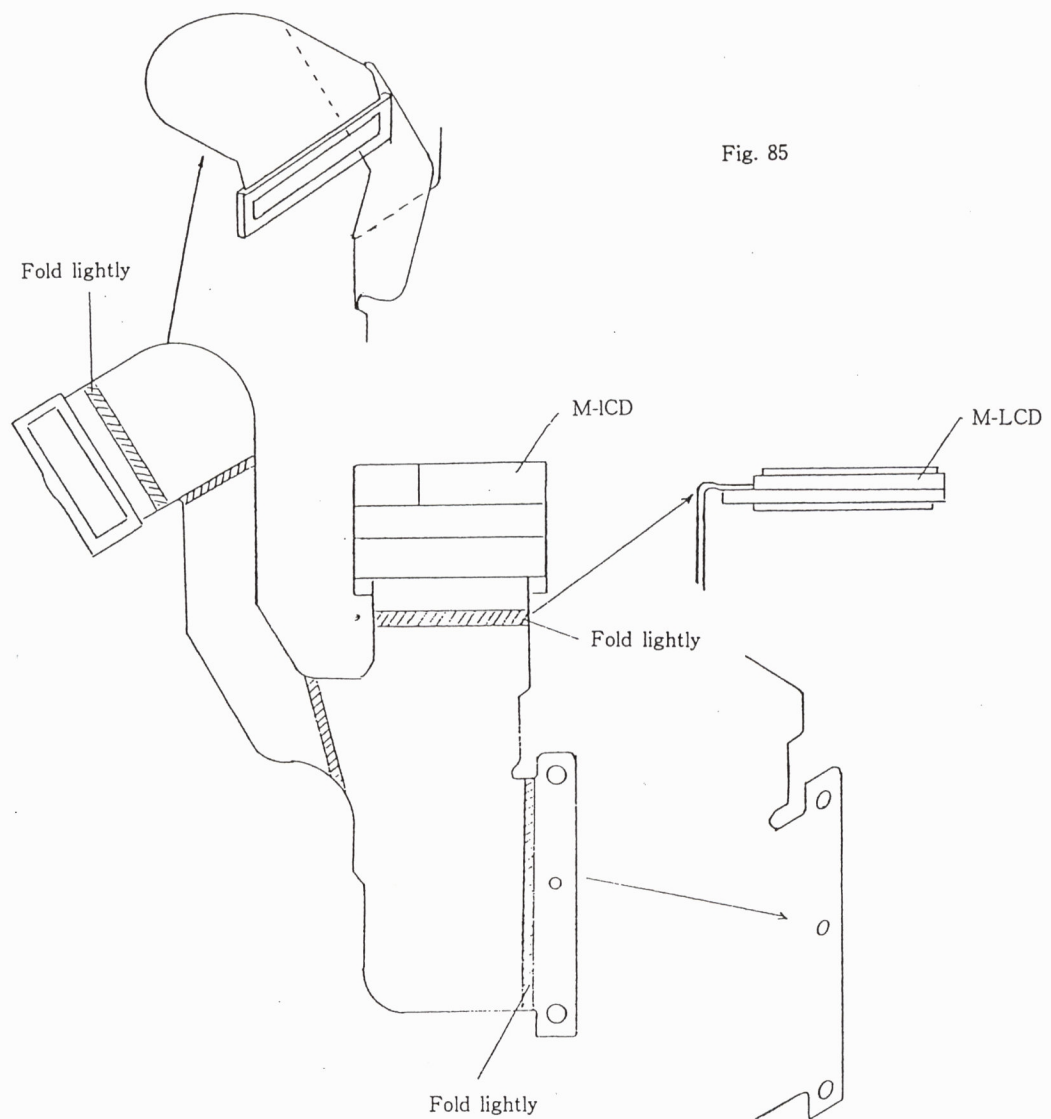
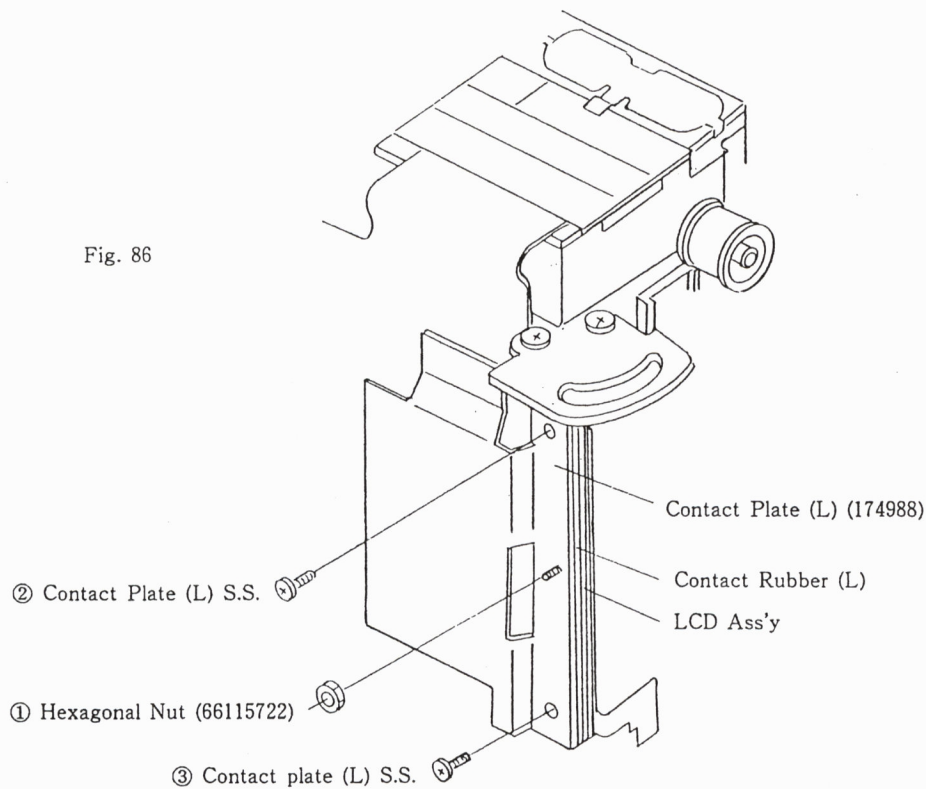


Fig. 85

[Assembling the Contact Plate (L)]

Assemble the contact plate in the order indicated below (start with tightening the Hexagonal nut). (66115722)



[Reason]

If malcontact of Contact Plate (L) with LCD Ass'y, some segment of the LCD will be figure missing and the readout will be dimly appear in the LCD display.

[Cause]

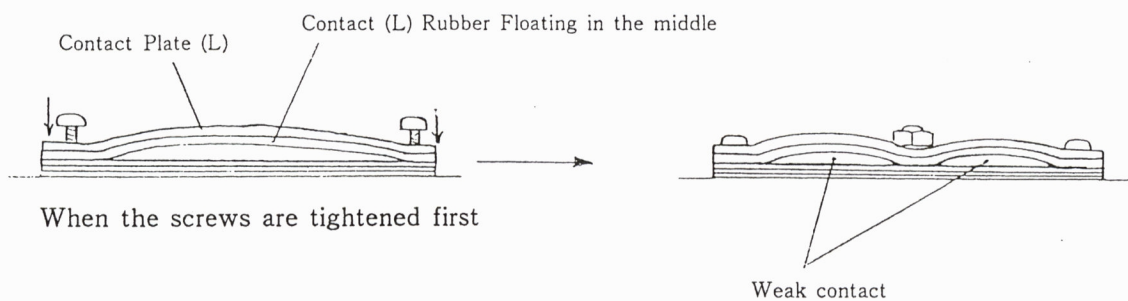
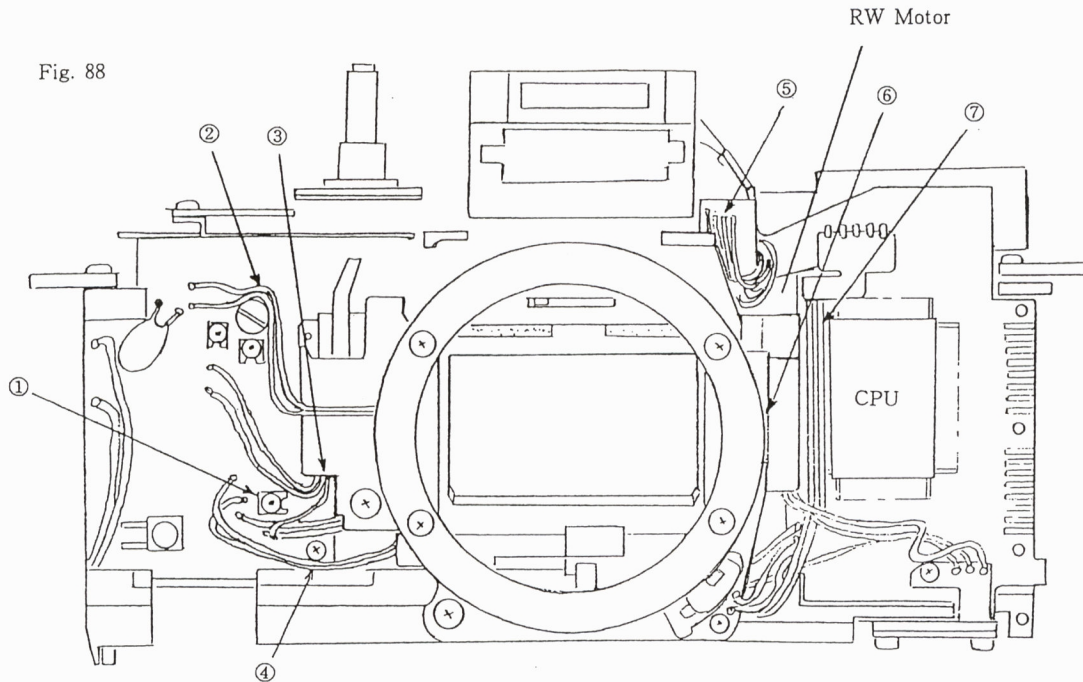


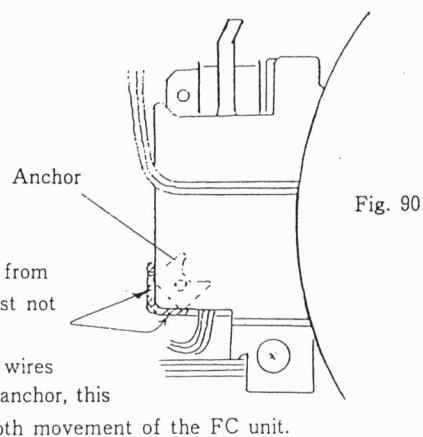
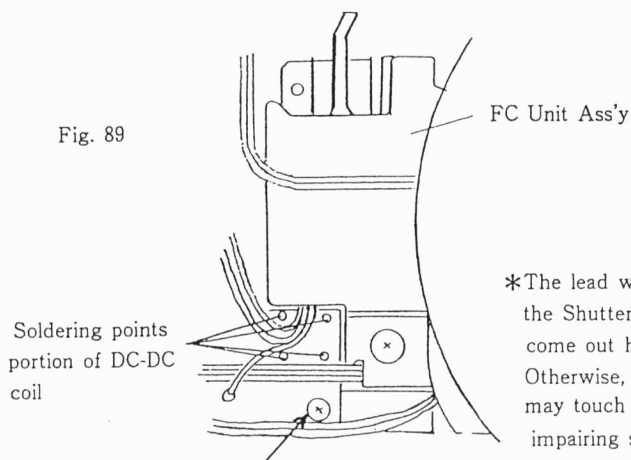
Fig. 87

C-8-4 Forming the Lead Wires

- ① Do not install the lead wires on top of the Variable Resistor.
- ② From the red and blue lead wires from the F Magnet on top side of the Flexible Board Post.



- ③ Do not from the Brown, Pink and Purple lead wires from the Shutter on any of the four soldering points of the DC-DC coil leads. Otherwise, the aperture value will remain set at F16 in the program mode.
- ④ Do not from the Gray and Orange lead wires from the SPD on the screw. Otherwise, the display lamp may not sometimes light up and the shutter may not be tripped.



*Do not install lead wires on the screw.

- ⑤ From the Blue, Green, Yellow and White lead wires from the FS Code Plate as shown in Fig. 91 so that they do not get squeezed between the Mirror Box and the Top Cover.

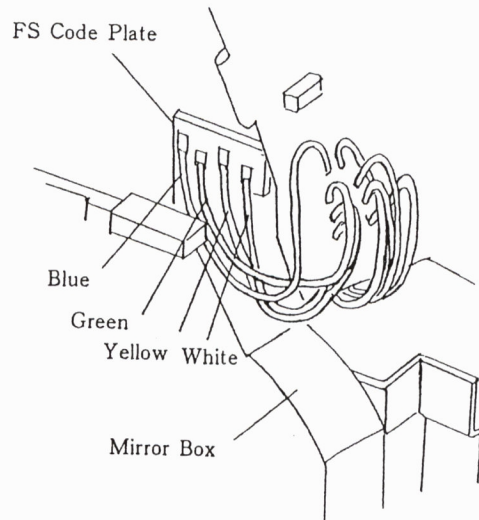


Fig. 91

- ⑥ Do not allow the lead wires to touch the AV Base Plate Ass'y on the right side of M. Box Ass'y.
- ⑦ Do not form the Brown, Light blue and Green lead wires on the top of the RW motor. Otherwise, the RW motor will not run.

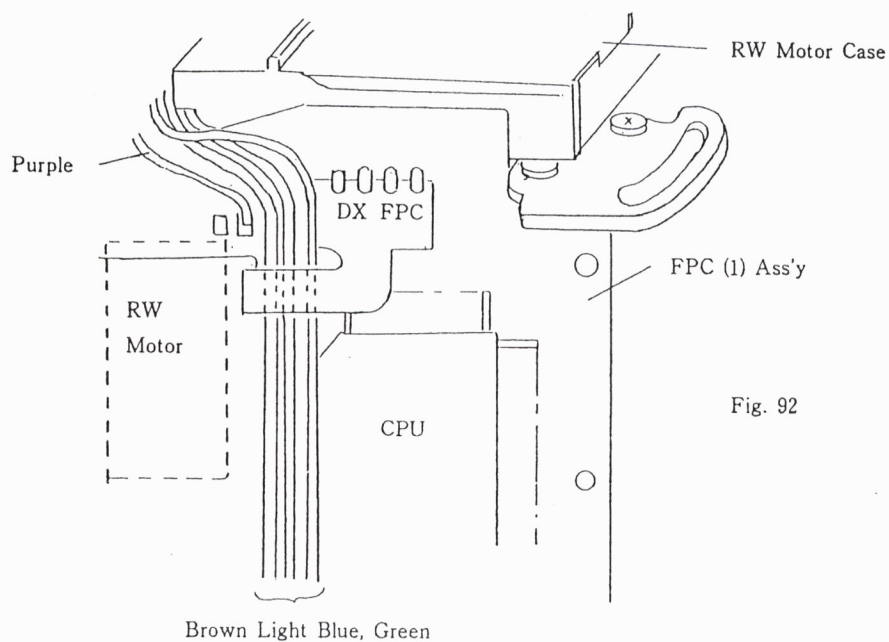
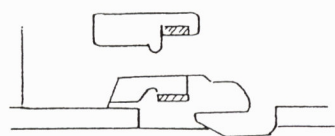
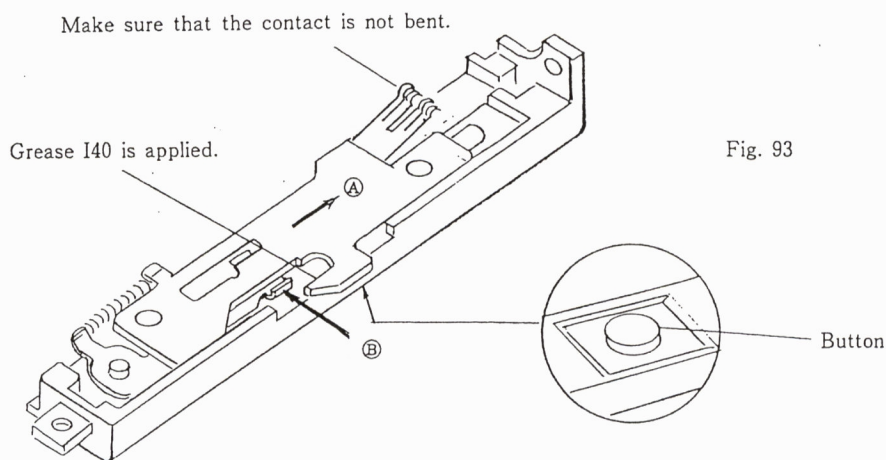


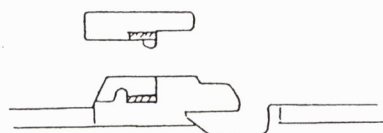
Fig. 92

C—9 Check of the Back Cover Lock Plate Unit Ass'y

- 1) Push the button and move in the direction of the arrow ① to Lock.
- 2) Push part ② in Fig. 93 with a screwdriver to unlock.



When the back cover is locked.



When the back cover is unlocked.

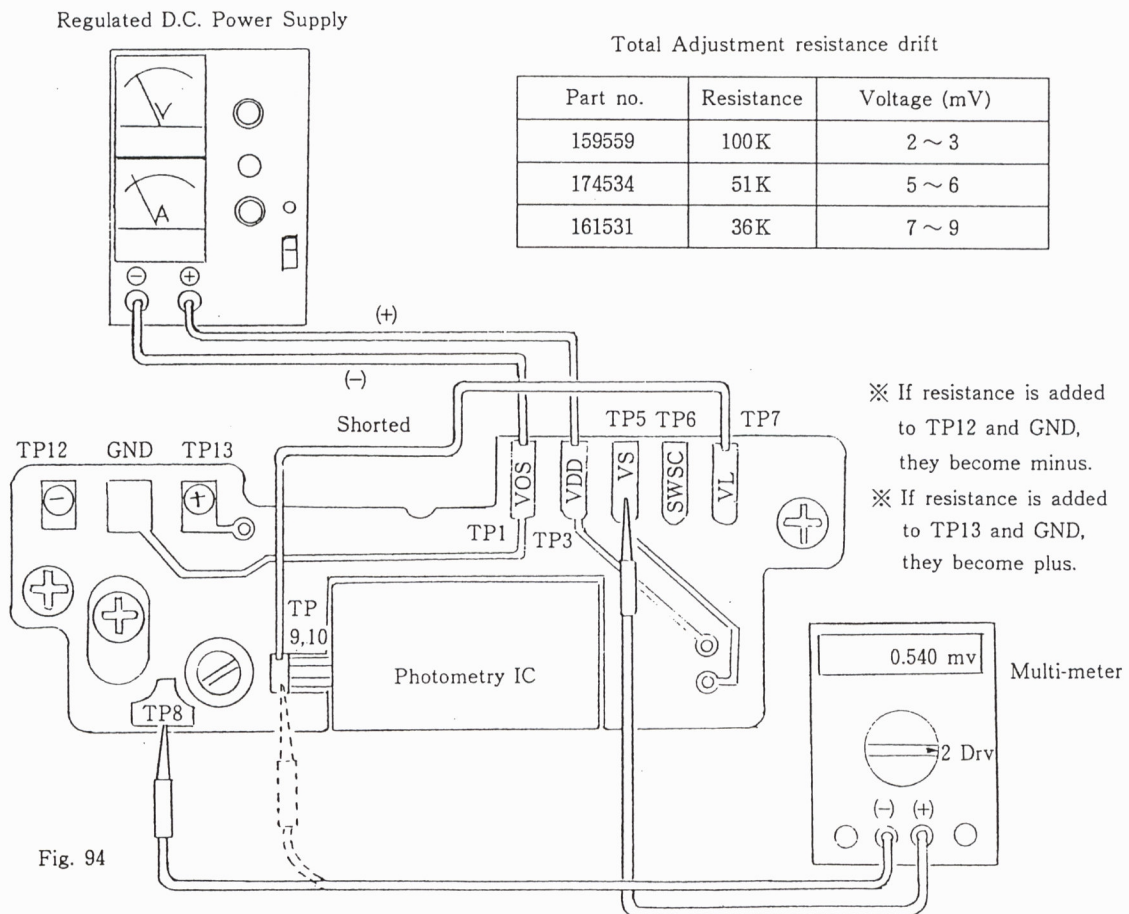
[Note]

- a) When checking the shutter speed or the exposure, push point ② with a screwdriver to unlock. If the lock is not released, the shutter will be fixed at the speed of $1/125$ sec.

C-10 Voltage adjustments

C-10-1 Offset voltage adjustment

- 1) Short with the lead wire which is connected from TP7 (VL) to TP9, 10.
- 2) Set the Regulated D.C. Power Supply at 4V.
- 3) Connect the plus terminal of the Regulated D.C. Power Supply to the TP3 (VDD), and the minus terminal to TP1 (VSS).
- 4) Have more than LV-15 amount of light to the body mount side.
- 5) Connect the plus terminal of the multi-meter to the TP5 (VS), and the minus terminal to TP8, and read the voltage value on the multi-meter.
- 6) Connect the minus terminal of the multi-meter to the TP9, 10 and read the voltage value. The value should be within plus 3V of the value of the TP8 reading. An adjusting resistor should be used to make sure that the value is within plus 3V of the TP8 value.



※ A multi-meter with an input impedance of more than 10M ohm is used.

C-10-2 Standard voltage (V_s voltage) Adjustment

- 1) Set the Regulated D.C. Power Supply at 5.5V.
- 2) Connect the plus and minus of the Regulated D.C. Power Supply to the camera body.
- 3) Release SW is depressed halfway (Power hold works for 16 sec.).
- 4) Connect the plus terminal of the multi-meter to the TP25 (V_r), and the minus terminal to the TP20 (V_s).
- 5) Adjust the Ra1 so that the multi-meter's reading is $720 \pm 5\text{mV}$. (Room temperature at 25°C)
※ It has temperature characteristics $+2.41\text{mV}/^\circ\text{C}$

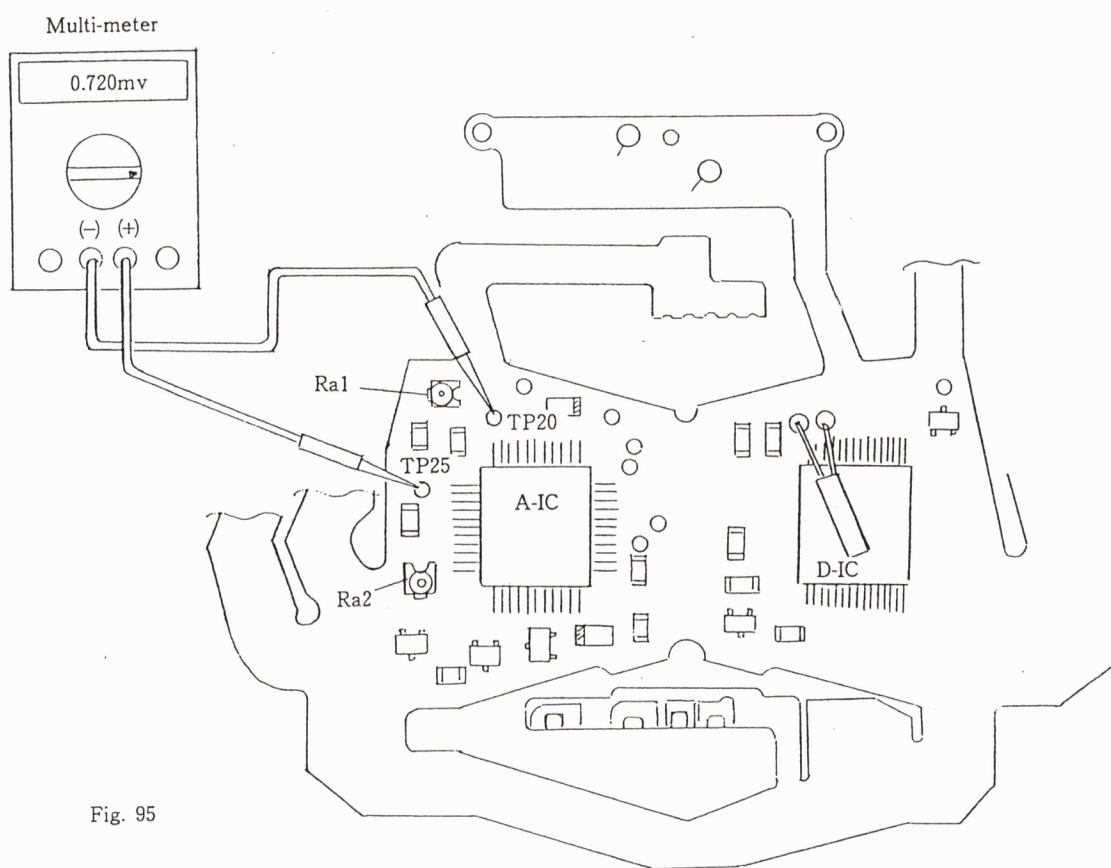


Fig. 95

C-10-3 Standard voltage of the Flash light control (VTH voltage) Adjustment

- 1) Set the Regulated D.C. Power Supply to 5.5V.
- 2) Connect the plus and minus of the Regulated D.C. Power Supply to the camera body.
- 3) Set to ISO 100.
- 4) Short the lead wire which is connected from TP24 (CHC) to GND.
- 5) Release SW is depressed halfway. (Power hold works for 16 sec.).
- 6) Connect the plus terminal of the multi-meter to the TP27 (VTH), and the minus terminal to TP20 (Vs).
- 7) Adjust Ra2 to make the voltage reading $160 \pm 5\text{mV}$.

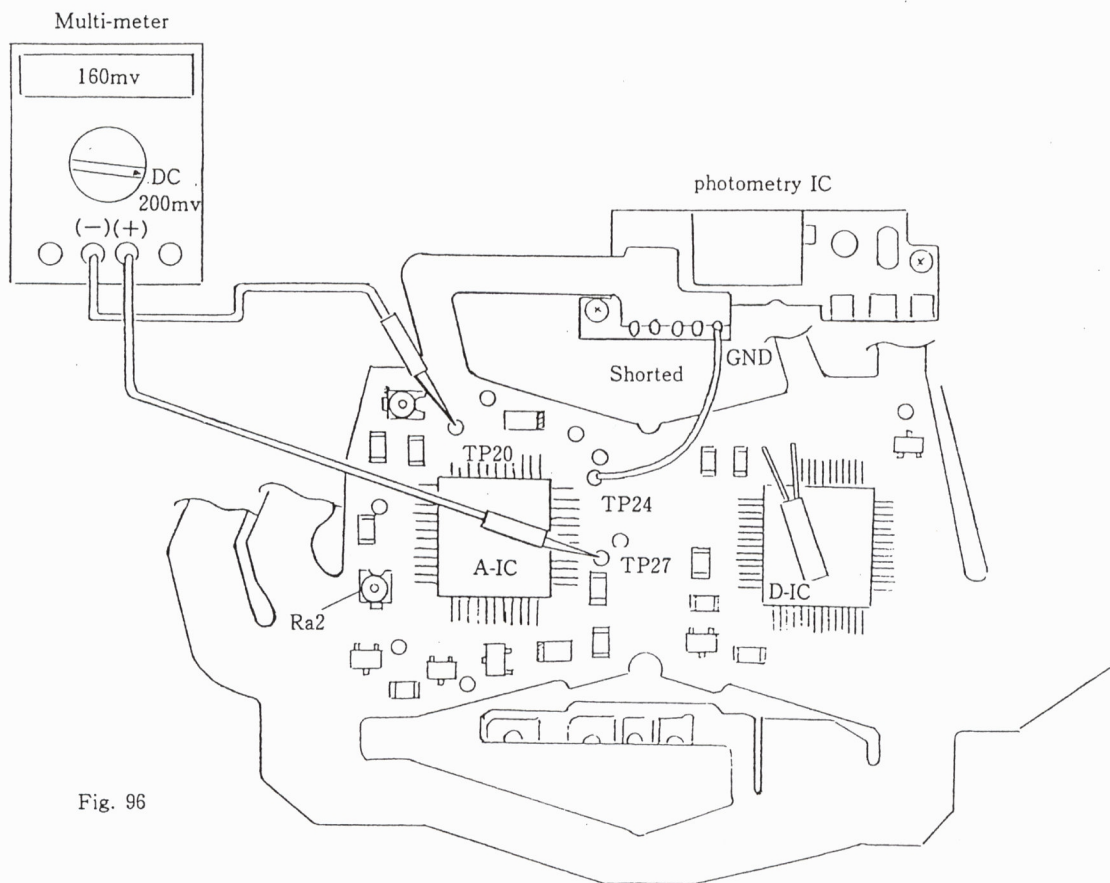


Fig. 96

C-10-4 Battery Check Adjustment

1) Verifying the battery check

The battery check is made by pushing the ISO Button and the Mode Button at the same time. The battery level is displayed on the M-LCD.

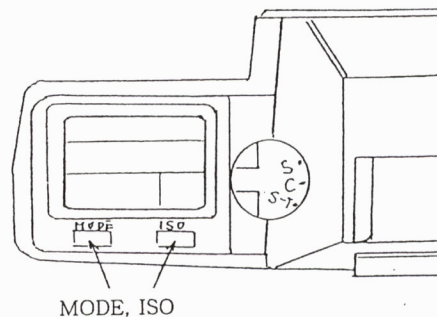


Fig. 97

POWER SUPPLY VOLTAGE	M-LCD DISPLAY	CONDITION	SIGNAL OUTPUT
Normal $3.40 \pm 0.15V$	Lighted 	Normal function	B1=H B2=H
Battery change warning $2.70 \pm 0.15V$	Blink (2Hz) 	Normal function	B1=L B2=H
No battery power	Blink (4Hz) 	Mal function	B1=L B2=L

2) Battery check adjustment

※ The length of the lead wires and the diameter of the lead wires from the Regulated D.C. Power Supply have some affect on dropping the voltage, and also the voltage in the FPC is dropped, so the M-LCD display (CPU handle) cannot measure the battery check.

[Adjustment method]

- a) Set the oscilloscope.
 - ① Time/DIV.....0.5ms
 - ② Sweep mode.....Auto
 - ③ Source.....CH1
 - ④ Volts/DIV.....0.5 V
- b) Connect the plus and minus terminals of the Regulated D.C. Power Supply to the camera body.
- c) Connect the oscilloscope probe to TP33 (B2).
- d) Lower the voltage of the rated voltage measuring machine from 3.0 V to 2.70V.

By adjusting the Ra5, when the voltage is 2.70 ± 0.15 , the voltage signal should change from H to L.
(Battery check display)

(Natal VP-5701A)

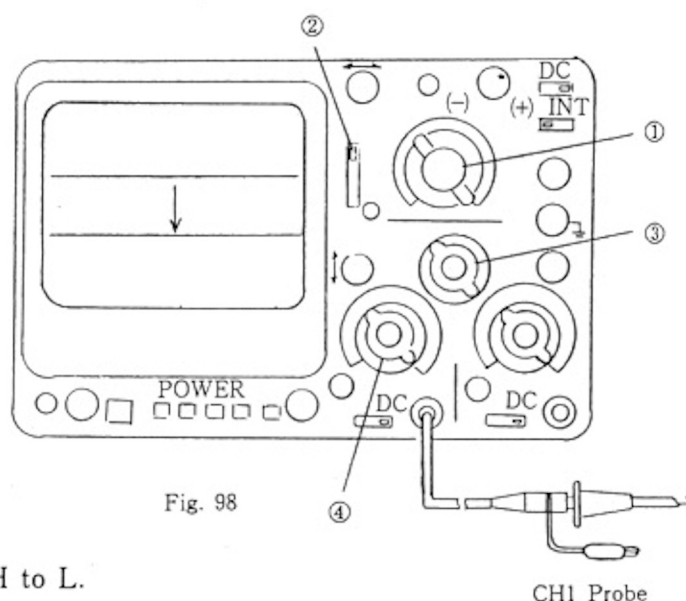


Fig. 98

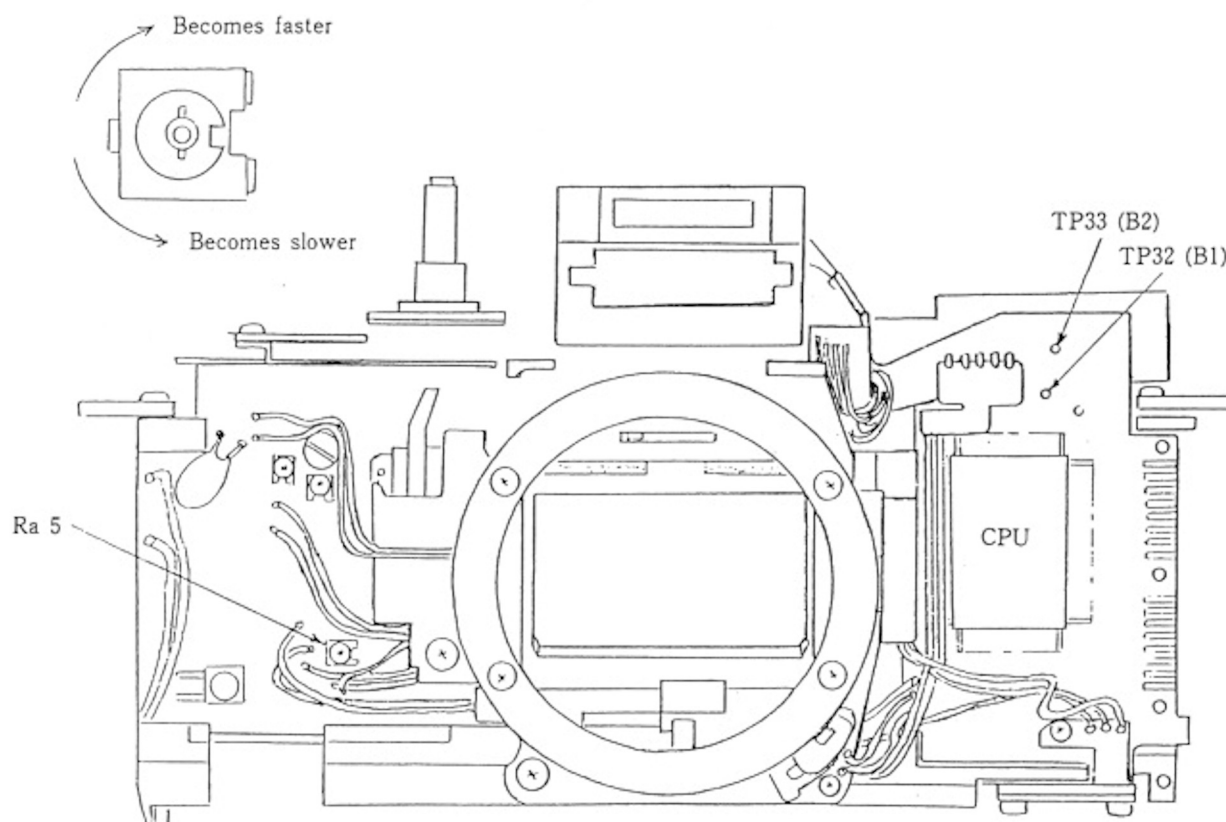


Fig. 99

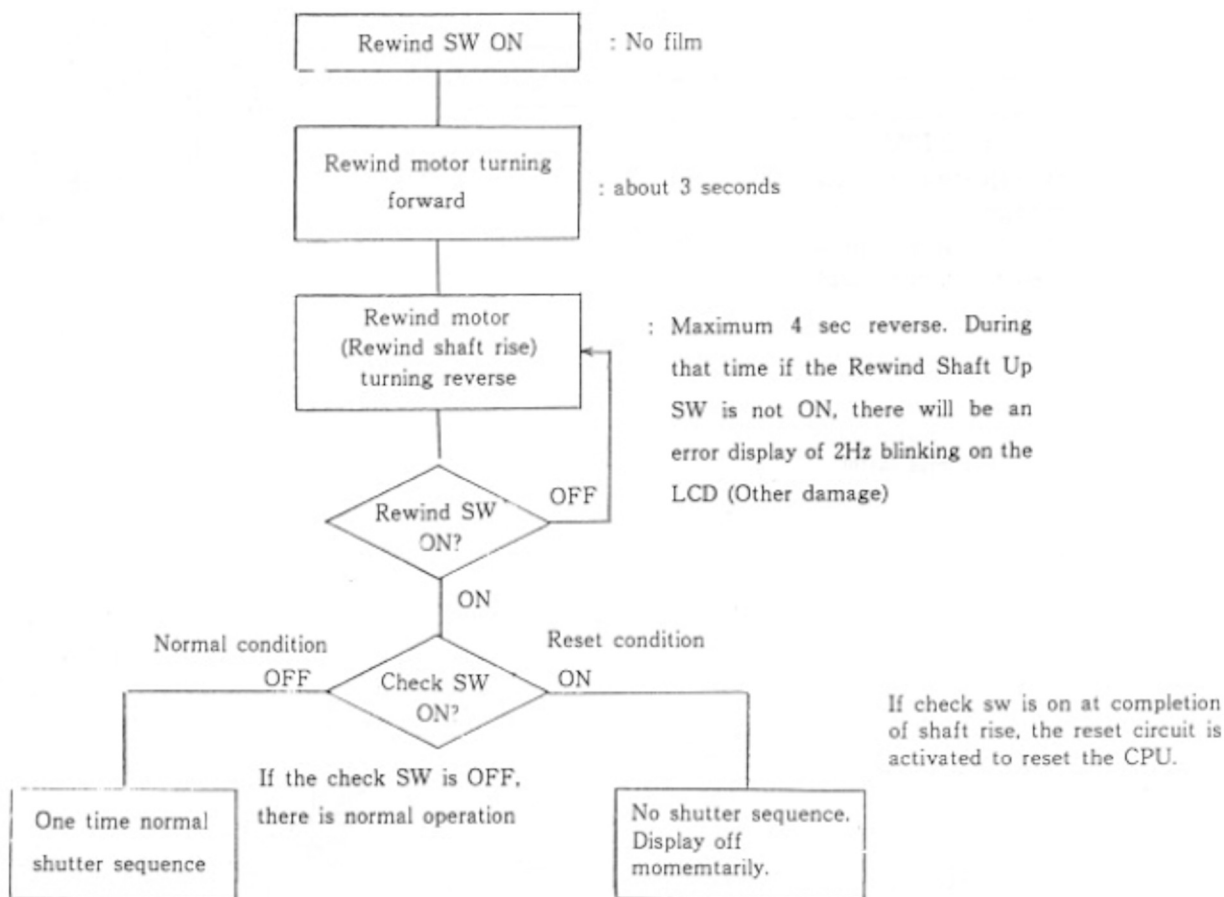
C-11 Concerning the change in the RS Base Plate and the Auxiliary Base Plate

C-11-1 Concerning the RS Base Plate (For reset circuit)

This circuit is intended to recover the CPU to normal condition by pushing the reset button in the case there has been strong external electro static shock or abnormal operation to the camera causing abnormal display or malfunction.

1) Confirming the Reset Circuit

a) Method of confirmation



b) Confirmation method 2

The display is OFF with the reset SW turned ON.

C-11-2 Remedies and changes of circuit boards

1) Auxiliary circuit board

This PCB prevents "flash mode turned on at high brightness level".

Problem solved :

When the power hold is turned on at high brightness level (BLV 20 or above), all the modes are turned into the flash mode (shutter speed : 1/125 sec.).

2) A circuit board

This PCB prevents "flash mode turned on at high brightness level" and "Shutter release is pushed momentary during Auto-matic Bracketing Control exposure compensation".

Problem solved :

At "S" mode (single mode) setting when the shutter release is pushed momentary is pushed momentary during the Automatic Bracketing Control exposure compensation, the counter display stop blinking from time to time while the display but exposure remains normal.

3) B circuit board (174A26)

This PCB prevents "flash mode turned on at high brightness level", "Shutter release is pushed momentary during Automatic Bracketing Control exposure compensation" and "TLA-20 display not flashing but lit".

Problem solved :

When the TLA-20 is used in a close distance, the display mark sometimes remains lit without blinking (4 Hz) within the flash light control range.

4) Old RS circuit board.....Reset circuit

5) New RS circuit board

This PCB acts as the reset circuit and prevents "Release pushed momentary during Automatic Bracketing Control exposure compensation" and "TLA-20 display not flashing but lit".

6) New FPC-1 Ass'y

Use of the new A-IC will prevent "flash mode turned on at high brightness level".

C-11-3 Combination of FPC-1 Ass'y with other circuit boards

- Auxiliary PCB + Old RS PCB + Old FPC-1 Ass'y

↓

- A PCB + Old RS PCB + Old FPC-1 Ass'y

↓

- B PCB + Old RS PCB + Old FPC-1 Ass'y

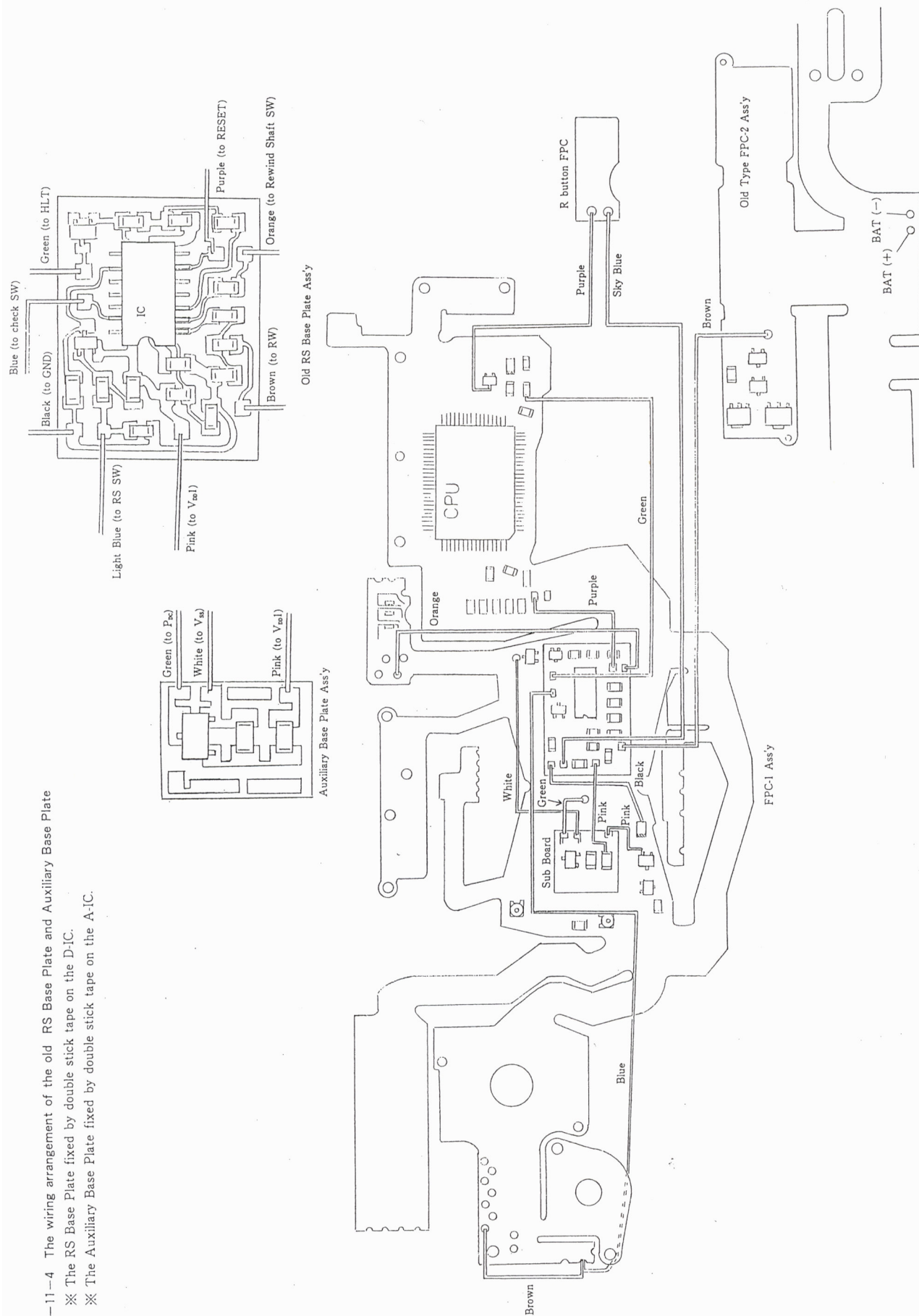
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- New RS PCB + New FPC-1 Ass'y

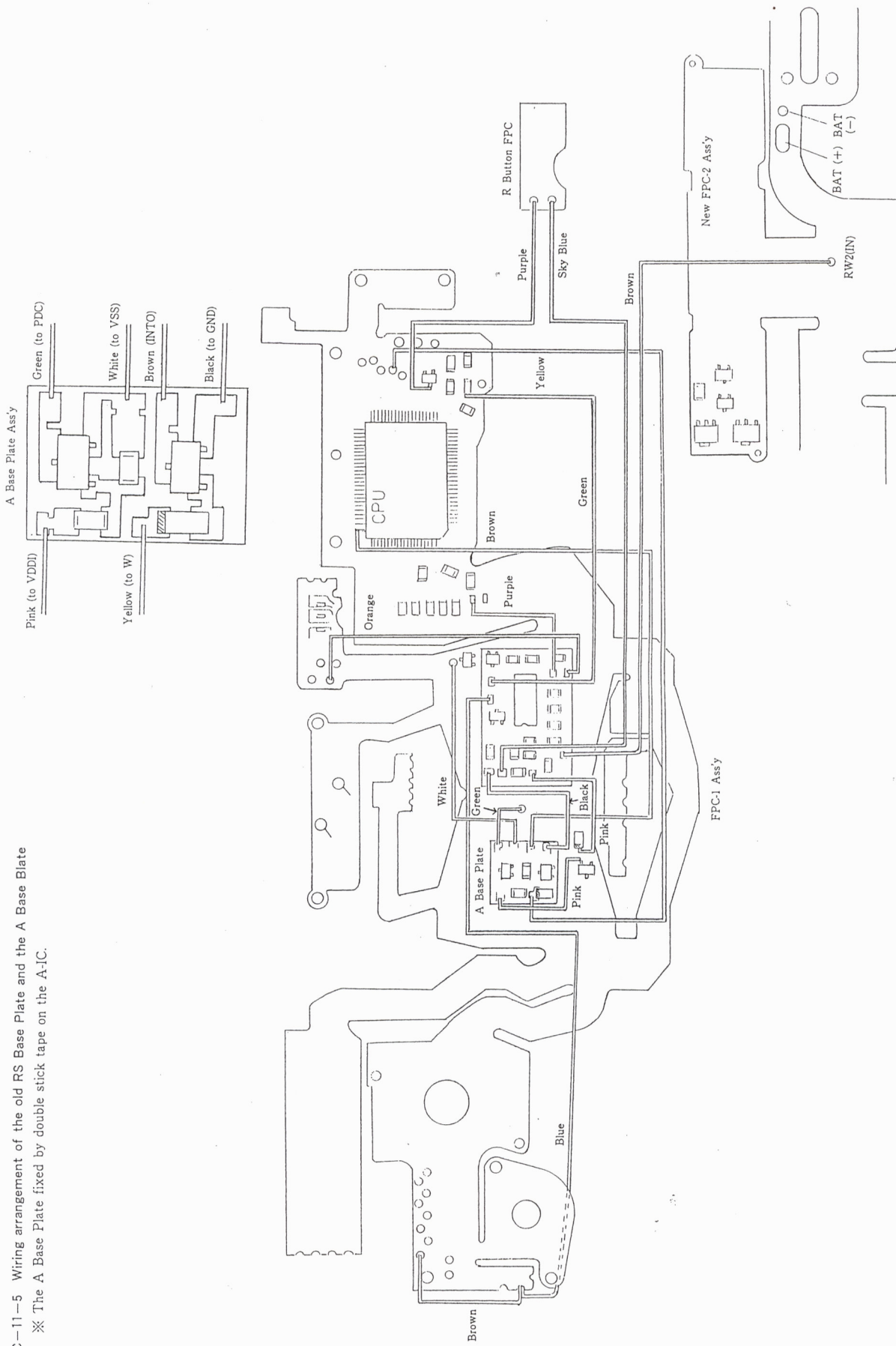
※ The FPC-2 Ass'y comes in the old and the new version, which only differ from each other in the FPC pattern.

C-11-4 The wiring arrangement of the old RS Base Plate and Auxiliary Base Plate

- ※ The RS Base Plate fixed by double stick tape on the D-IC.
- ※ The Auxiliary Base Plate fixed by double stick tape on the A-IC.



※ The A Base Plate fixed by double stick tape on the A-IC.

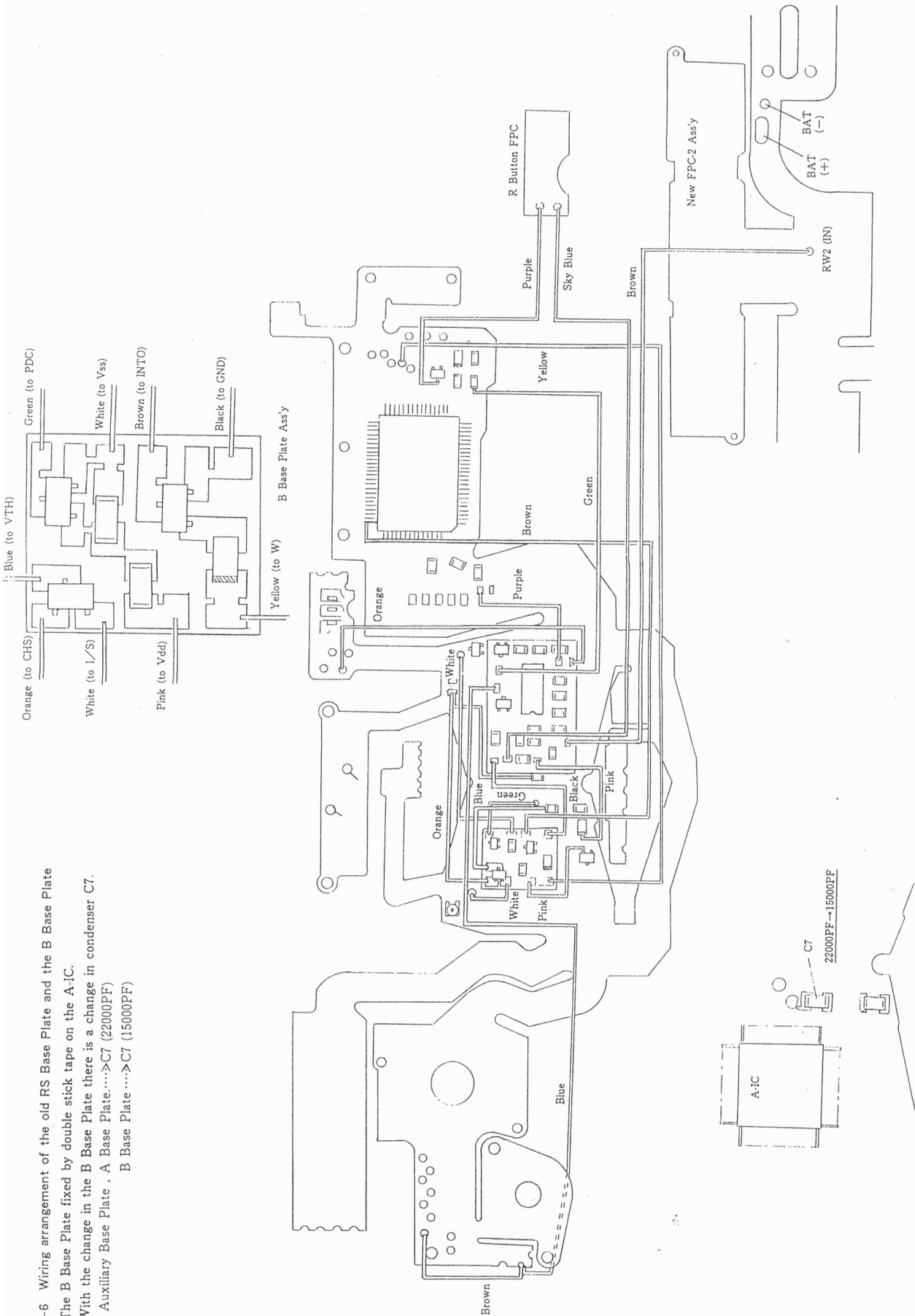


C-11-6 Wiring arrangement of the old RS Base Plate and the B Base Plate

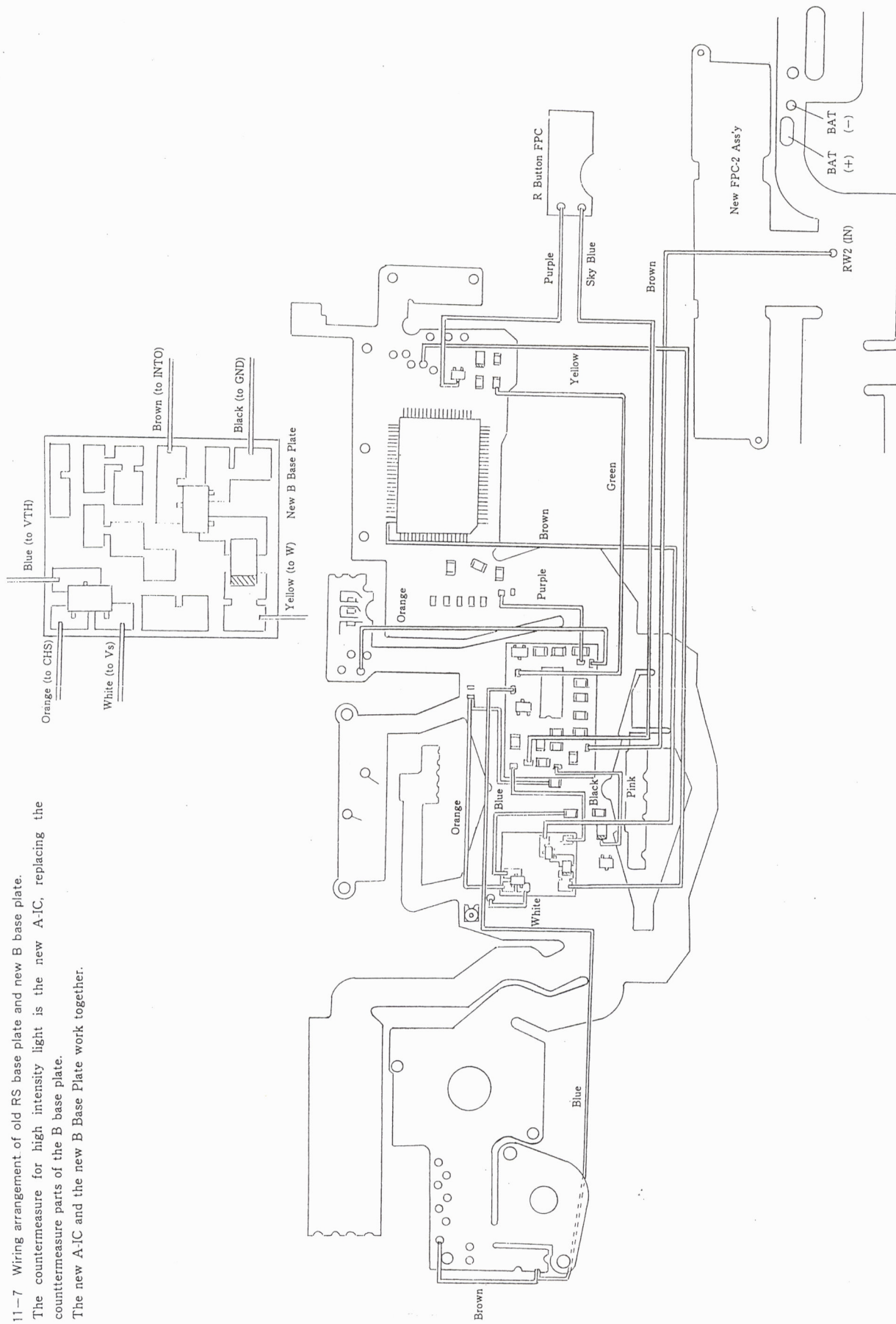
※ The B Base Plate fixed by double stick tape on the A-IC.

※ With the change in the B Base Plate there is a change in condenser C7.

- Auxiliary Base Plate , A Base Plate.....>C7 (22000PF)

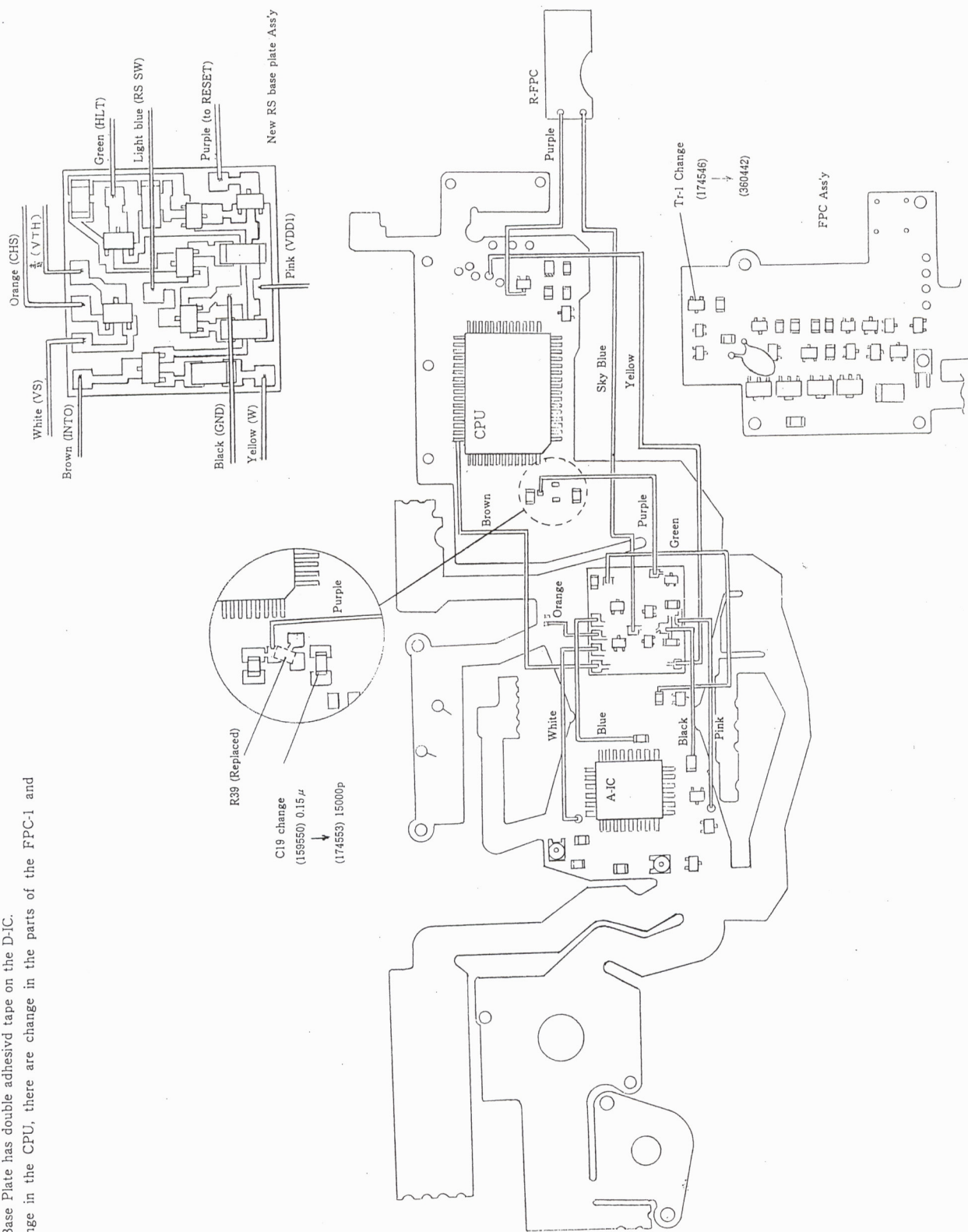


- C-11-7 Wiring arrangement of old RS base plate and new B base plate.
- ※ The countermeasure for high intensity light is the new A-IC, replacing the countermeasure parts of the B base plate.
 - ※ The new A-IC and the new B Base Plate work together.



C-11-8 Wiring arrangement of New RS Base Plate and new FPC-1

- ※ The new RS Base Plate has double adhesivd tape on the D-IC.
- ※ With the change in the CPU, there are change in the parts of the FPC-1 and FPC-2.



C-12 Shutter

C-12-1 Shutter Speed

Manual Shutter Speed to larence Limits

Speed	+	Standard Value	-
16"	16564	16000	15455
8"	8282	8000	7727
4"	4141	4000	3864
2"	2076	2000	1932
1/ 1	1035	1000	966
1/ 2	517. 6	500	483. 0
1/ 4	258. 8	250	241. 5
1/ 8	134. 0	125	116. 6
1/15	66. 99	62. 50	58. 32
1/30	33. 55	31. 30	29. 20
1/60	16. 75	15. 63	14. 58
1/ 125	8. 37	7. 81	7. 29
1/ 250	4. 81	3. 91	3. 17
1/ 500	2. 40	1. 95	1. 58
1/1000	1. 21	0. 98	0. 80
1/2000	0. 622	0. 49	0. 383
1/4000	0. 370	0. 244	0. 161

Chart-1

(m sec.)

※ In principle, the shutter speed adjustment is not necessary. But in case for speeds out of the normal range, adjustment is done with a adjusting screw. (see Fig 21)

C-12-2 Shutter curtain speed

The 1st and 2nd curtains travel speed should be within 6.0 ms from the top of the frame to the bottom. (The shutter tester's sensitivity point is about 21mm)

C-13-3 Synchronization Switch

1) Time Lag

The synchro switch must be turned ON with a time range from in mediately after the 1st curtain is fully opened till 1.5ms after the 2nd cartain starts closing.

A range 0.3 to 0.9 ms

B range more than 1.5 ms

2) Contact efficiency

More than 60% at 1/125 (manual).

C-13 Exposure Adjustment

C-13-1 Average (AV Mode) Light Metering Adjustment

- 1) Set the camera to ISO 80, AV Mode, average light metering (□ mark) and set the aperture to F5.6.
- 2) Set the EE tester to ASA 100, K=1.3.
- 3) The camera is measured with the EE tester. Adjust the Ra4 so that the EV value is 0.0 when the LV=12, the shutter speed = 1/125 and the aperture is F5.6.
- 4) For each Luminance level (LV15, LV8, LV4) the Exposure is decided as shown in Table 2.

Luminance (LV)	EV Tolerance	Shutter speed
4	-0.60 ~ +0.60	2
8	-0.60 ~ +0.60	8
12	-0.60 ~ +0.60	125
15	-0.60 ~ +0.60	1000

Table 2.

C-13-2 AV Mode the spot light Metering Adjustment.

- 1) Set the camera to ISO80, AV Mode, spot light metering (O mark) and the lens aperture to F5.6.
 - 2) Set the EE tester to ASA 100, K=1.3.
 - 3) The camera is measured with EE tester. Adjust the Ra3 so that the EV value is 0.00 when the LV=12, shutter speed=1/125, and the aperture is F5.6.
 - 4) For each luminance level (LV15, LV8, LV4) the Exposure is decided to be in the range shown in Table 2.
- ※ After the adjustment, Ra3 and Ra4 Locked in the white lacquer.

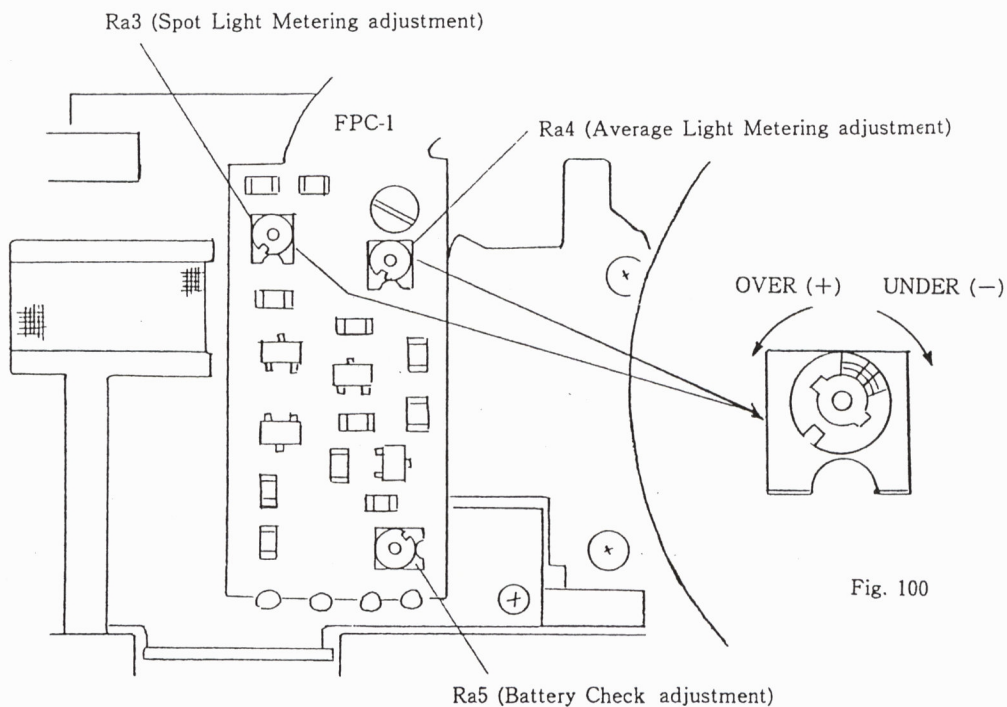


Fig. 100

C-13-3 Exposure of the Program Mode Adjustment

- 1) Set the camera to ISO80, Program Mode, Average Light measuring, and change to the MM lens set at aperture F16.
- ※ High program and low program are the same.
- 2) Set the EE tester at ASA 100, $K=1.3$.
- 3) The camera is measured with the EE tester. The shutter speed and the aperture value are determined by the LV as show in Table 3.

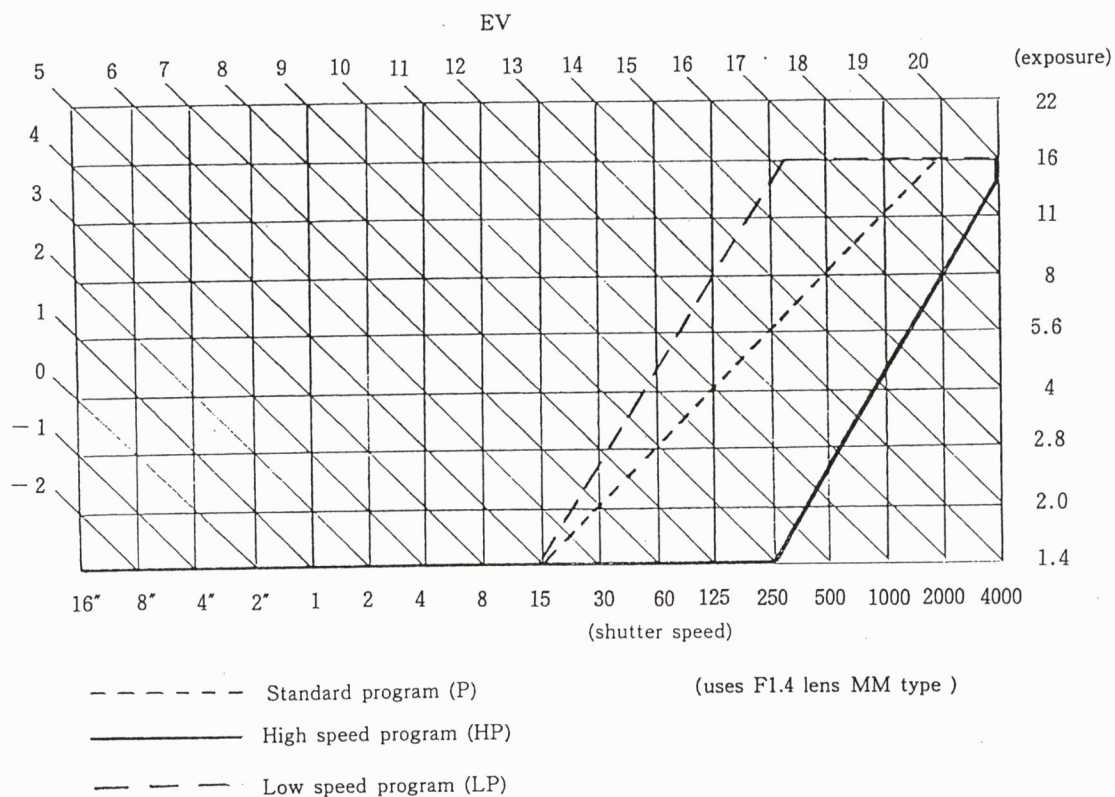
Program MODE

Luminance (LV)	Shutter speed	Aperture
8	45	2.4
12	180	4.5
15	570	8

Table 3.

	Luminance (LV)	Shutter speed	Aperture
High program	12	500	2.8
Low program	12	90	6.5

Table 4



[Adjustment difference of AV Exposure for Program Exposure]

- ※ Difference of exposure at AV, P, HP and LP have to be within $\pm 0.3\text{EV}$ for each Luminance level.
- ※ If Program exposure is over for AV exposure, Connect with jumper wire AJ1, GND, and AJ2 as shown in (Fig. 101).

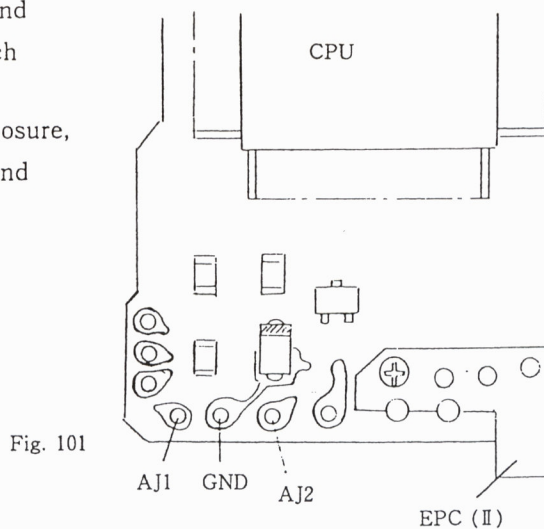
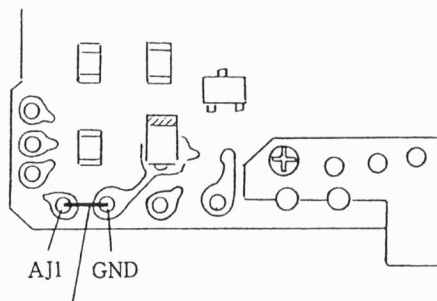


Fig. 101

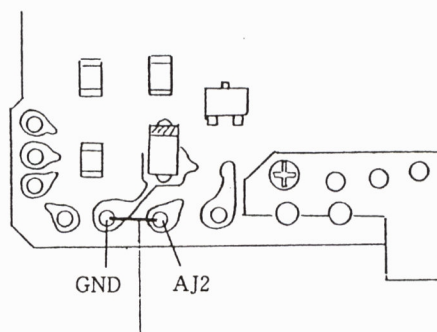
- ① When the difference in Exposure is from +0.12 to +0.19 EV, the AJ1 and GND are connected with a jumper wire.



Connect with jumper wire

Fig. 102

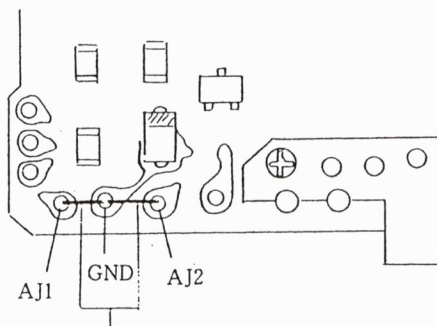
- ② When the Exposure difference is between +0.20 and +0.31 EV, the AJ2 and GND are connected with a jumper wire.



Connect with jumper wire

Fig. 103

- ③ When the Exposure difference is between +0.32 and +0.44 EV, the AJ1, AJ2, and GND are all connected by jumper wires.



Connect with jumper wire

Fig. 104

- ※ When the difference in Exposure is more than 0.5 EV, it is checked with the Theta Compensation Base Plate.

[When the program Exposure is Under]

※ When the program Exposure is under, the following check is made :

- 1) Check the action of the FC ring

Check if the FC ring moves smoothly when the Aperture Lever is pushed in direction ① while the FC Ring is turned in the direction of the arrow shown in Fig. 105.

- a) Check whether or not the lead wires are free from the Anchor.
- b) Check whether or not the FC Unit is mounted in the same way as explained in C-3-4.

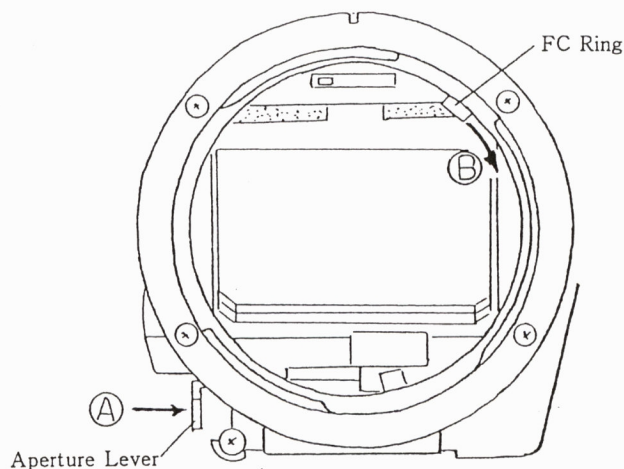


Fig. 105

※ When disassembling the FC Unit, the following items should be checked:

- 2) FC Gear (1) should not have any play.
- 3) Check if the FC Ratchet returns to its position after being turned in the direction of the arrow 90°. If the Ratchet is not smooth in returning, check the following items :
 - Touch between the FC Slit R outer circumference and the FC Slit SP.
 - Touch between the FC Slit R and the Photo Coupler or FC Slit F.
 - Defect in the Delay Gear's revolution. (Burr or scratch in the E ring)
 - Caught by some scratch in the Delay Gear.

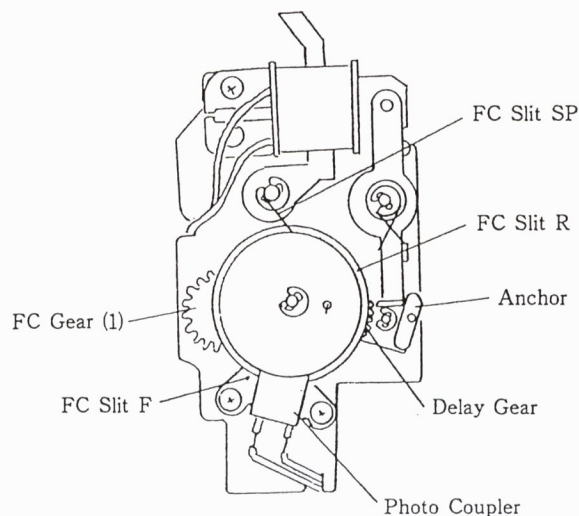


Fig. 106

FC Unit Ass'y

- 4) Check whether or not the encoder is working properly.

(Procedure for checking the amplitude of the encoder)

Procedure

- a) Set the oscilloscope
 - ① Time/Div 1 ms
 - ② Sweep mode.....Auto
 - ③ Source.....CH 1
 - ④ Volts/Div.....50mV

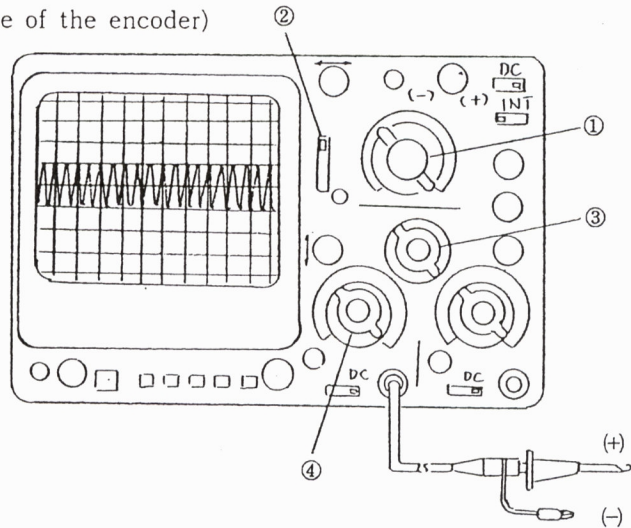


Fig. 107

- b) Unsolder the F-MG Lead Wire. (Red or Blue) from FPC-1.
- c) Connect the R11 (1K Ohm) directly to the GND.
- d) Connect the CH 1 probe (+) to the TP 5 (pin) and the CH 1 probe (-) to the Vs.
- e) Release SW is depressed and then read the encoder's amplitude.

Highest value H level more than 750mV

Lowest value L level less than 80mV

※ When the encoder amplitude cannot be seen, change the position of the encoder, or replace the encoder.

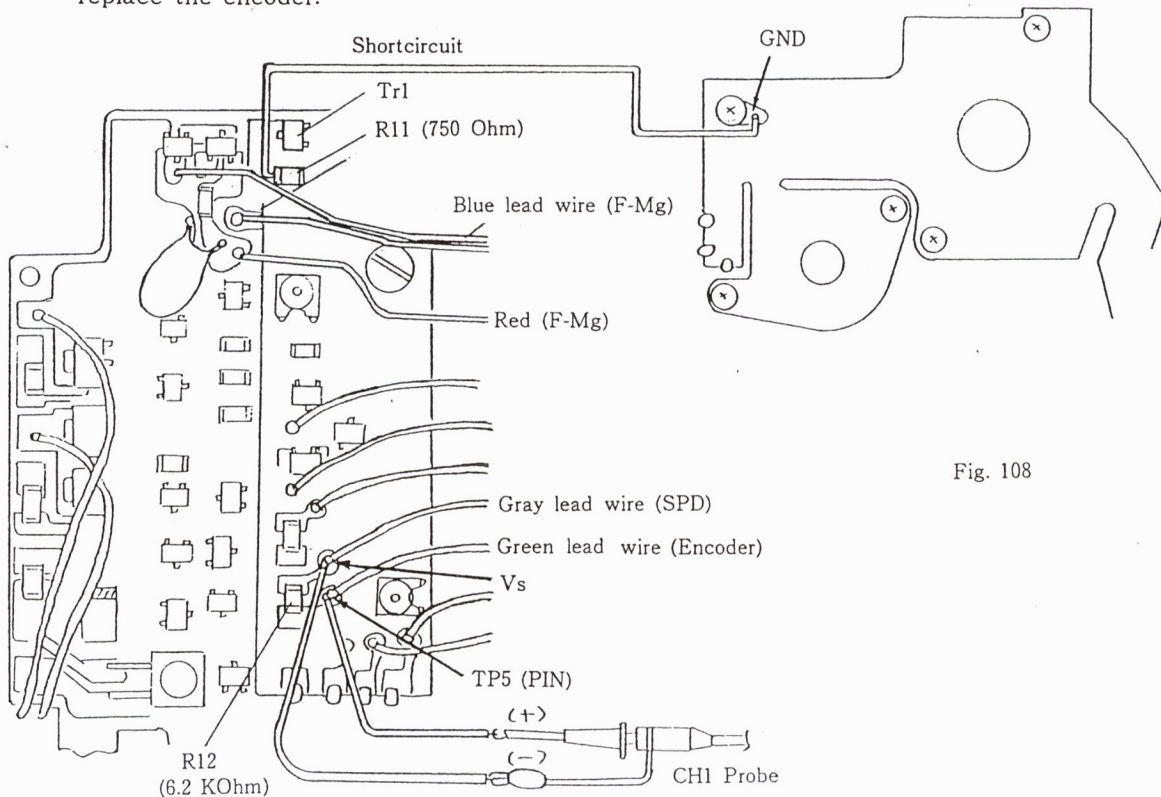


Fig. 108

C-13-14 Confirming the Exposure of Shutter Priority (TV Mode)

- 1) Set the camera to ISO 80, TV Mode, average Measuring (☐ mark) and use a MM lensa set at F16.
- 2) Set the EE tester at ASA 100, K=1.3.
- 3) The camera is measured with the EE tester. With the shutter speed set at 1/125, the aperture value is shown in Table 5.

TV Mode		
Luminance (LV)	Aperture	Shutter speed
8	1.4	125
12	5.6	
15	16	

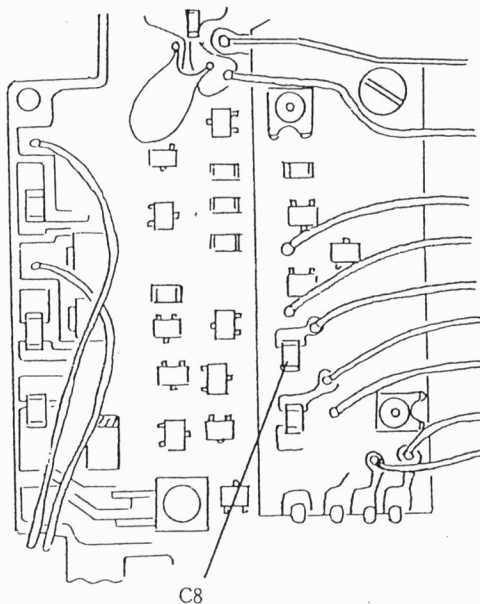
※ The Exposure of the TV is within ± 0.3 EV of the Apertuer Priority (AV).

C-14 Flash Light Control (Flash Exposure) Adjustment

C-14-1 Flash light Control Adjustment

- 1) Camera.....Auto, ISO 100, F1.4, Load any kodachrome film in the camera.
- 2) EE tester.....LV 12
- 3) Use a universal counter
Flash light Control time $200\mu s \pm 50$
Flash light control adjust by replacing C8 capasitor (Choices available)

C 8 select	Part No.	capacity
	174524	680 P F
	174523	750 P F
	174538	820 P F



C—15 Confirming current consumption

C—15—1 Checking current consumption

- ※ Battery value is rated 5.6V, 3.0 A.
- ※ Main SW OFF Stand by current Less than $15\mu\text{A}$
- ※ Main SW ON
 - LCD ON (LCD lit) less than 15 mA
 - LCD OFF (LCD not lit) less than 15 mA
 - During winding less than 900 mA (with film)
 - During rewind less than 700 mA (with film)
 - Release less than 50 mA
 - Battery check less than 260 mA

C—16 Flange back distance Adjustment

C—16—1 Adjusting the flange back

- The distance as measured from the Body Mount Plane to the film rail surface is 45.42 ± 0.02 for the entire surface
- ※ The adjusting washer 128666 is 0.05mm, and the 128667 is 0.02mm.
- The difference in the layer of the film side rail surface and the pressure Plate rail surface (Space between tunnels) is $0.2 \pm 0.02\text{mm}$.

D Others

D. OTHERS

D-1 Electronic Component and Function List

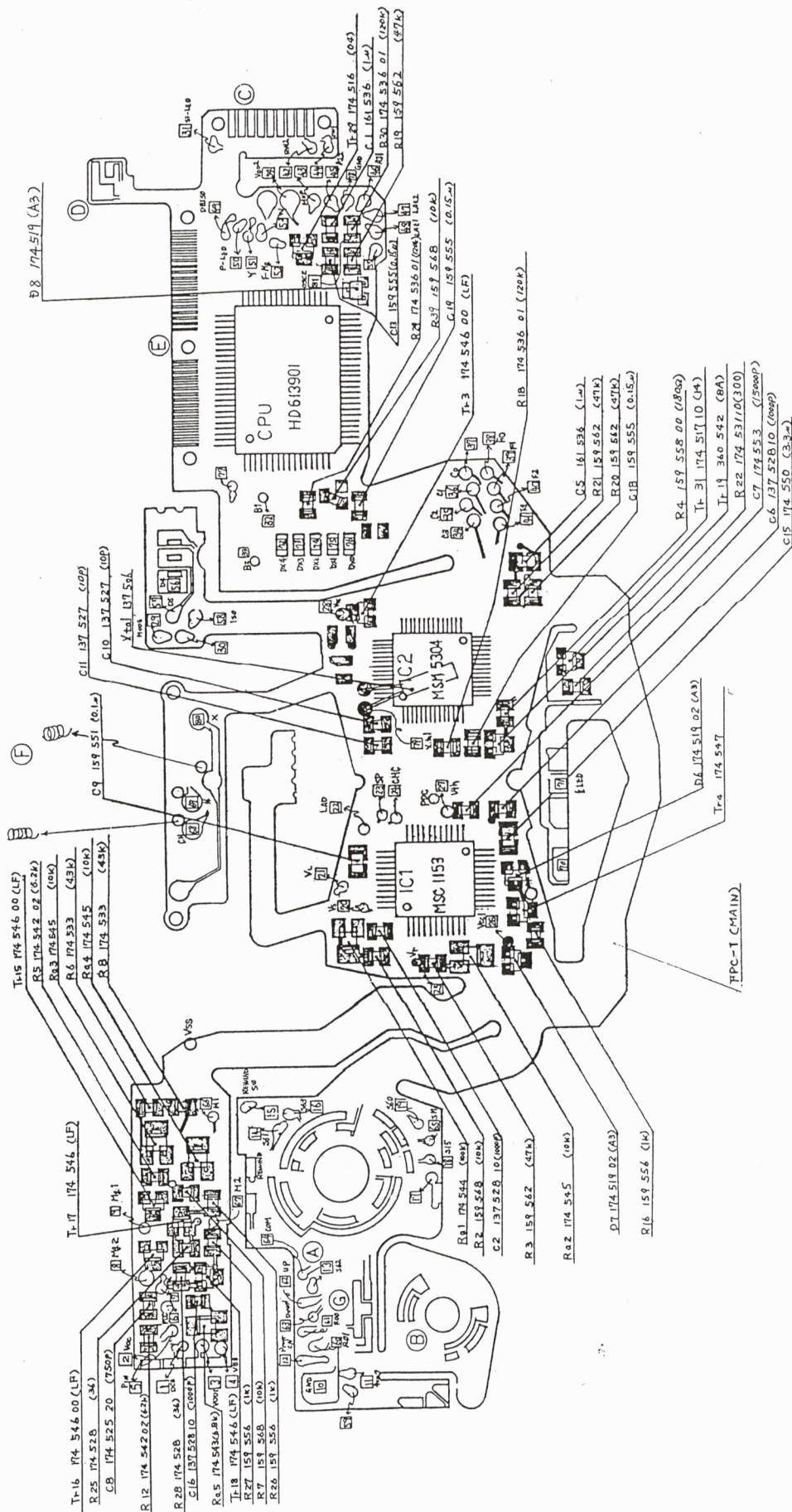
SYMBOL	PART NAME	FUNCTION
<u>IC</u>		
IC-1	Analog IC	
IC-2	Digital IC	
IC-3	CPU	
IC-4	photometry IC	
<u>Transistor</u>		
Tr-1	NPN	P-LED Driver
Tr-2	NPN IC+50mA	Voltage Booster
Tr-3	NPN	PH Control
Tr-4	PNP	Voltage Regulator
Tr-5	PNP 10K, 10K	Self-Timer LED Driver
Tr-6	PNP 10K, 10K	F-Mg Control
Tr-7	PNP 10K, 10K	WIND Y Control
Tr-8	NPN 1K, 10K	Y Control
Tr-9	NPN IC ; 2A	Y Drive
Tr-10	PNP 2A	W Drive
Tr-11	PNP 2A	Y Drive
Tr-12	NPN 2A	W Drive
Tr-13	NPN 1K 10K	W Control
Tr-14	PNP 10K, 10K	W Control
Tr-15	NPN	ST-Mg1 Control
Tr-16	NPN	ST-Mg2 Control
Tr-17	NPN	ST-Mg1 (Constant Current)
Tr-18	NPN	ST-Mg2 (Constant Current)
Tr-19	NPN 10K, 10K	F-LCD Illumination Control
Tr-20	PNP 10K, 10K	Rewind2 Control
Tr-21	NPN 1K, 10K	Rewind2 Control
Tr-22	NPN IC ; 2A	Rewind2 Drive
Tr-23	PNP 2A	Rewind1 Drive
Tr-24	PNP 2A	Rewind2 Drive
Tr-25	NPN 2A	Rewind1 Drive
Tr-26	NPN 1K, 10K	Rewind1 Control
Tr-27	PNP 10K, 10K	Rewind1 Control
Tr-28	NPN 510, 5, 1K	F-Mg Drive
Tr-29	NPN 10K	For CPU PH (Vss)
Tr-30	NPN 1K, 10K	Voltage Limiter
*Tr-31	PNP 10K, 10K	Mark Illumination
Tr-32	PNP 10K, 10K	Sub-P. C. Board, for CPU
Tr-33	NPN 10K	A-IC. (for PDC)

SYMBOL	PART NAME		FUNCTION
<u>Diode</u>			
D-1	Zener Diode		Battery Polarity Protection
D-2	Diode (Mini Type)		Voltage Booster
D-3~4	Diode (Mini Type)		WIND Motor Surge Protection
D-5	Shotkey Diode		For Back-Up
D-6	Diode (Mini Type)		Vdd-Vdd 1.2
D-7	Diode (Mini Type)		Vcc-Vcc1
D-8	Diode (Mini Type)		Analog IC
ZD-1	Zener Diode		Voltage Limiter
<u>Coils</u>			
L-1			DC-DC Converter
<u>LED</u>			
LED-1	Self-Time LED	LED,Red	Self-Time LED
LED-3			F-LCD
LCD-A	LCD		
Batt	Lithium Battery		For CPU Back-Up
Xtal	32KHZ, ϕ 2		System Clock
SPD-1	Without Filter		
PC-1	Photo Coupler		Encoder
<u>Capacitors</u>			
C-1	Chip-Tantalum Capacior	1U10V	Vdd Stabilizer
C-2	Chip-Tantalum Capacior	1000p	Vs Stabilizer
C-3	Chip-Tantalum Capacitor	1000p (102)	Voltage Booster
C-4	Chip-Tantalum Capacitor	10p	Vb Stabilizer
C-5	Chip-Tantalum Capacitor	1U10V	Vcc Stabilizer
C-6	Chip-Ceramic Capacior	1000P	Vdj Oscillation Protection
C-7	Chip-Ceramic Capacittor	1500PF	Flash Light Control Compensation
C-8	Chip-Ceramic Capacitor	750P,(820P, 680p, 560P)	Flash Light Control Integrator (Optional)
C-9	Chip-Tantalum Capacitor	0.1U35V	Dual slopeIntegration
C-10~11	Chip-Ceramic Capacitor	10P	Quarz Oscillator
C-13	Chip-Ceramic Capacitor	0.15U	LCD Drive Voltage Stabilizer
C-14	Dip Tantalium Capacitor	100U	F-Mg Driver
C-15	Chip-Tantalum Capacitor	3.3U6.3V	Vddl Stabilizer
C-16	Chip-Ceramic Capacitor	1000PF	VBJ Stabilizer
C-17	Chip-Ceramic Capacitor	0.15UF	Sub-P.C. Board, A-IC
C-18	Chip-Ceramic Capacitor	0.15UF	Hlt-GND
C-19	Chip-Ceramic Capacitor	0.15U	Reset Stabilizer
C-(8)Chip-Ceramic Capacitor		680PF	Flesh Light Control Integration, Optional
C-(8)Chip-Ceramic Capacitor		470PF	Flesh Light Control Integration, Optional

SYMBOL		PART NAME	FUNCTION
<u>Potentiometers</u>			
Ra-1		100K2Terminals	Vr Adjustment
Ra-2		10K3Terminals	Vth Adjustment
Ra-3		10K3Terminals	Spot Metering Adjustment
Ra-4		10K3Terminals	Ave. measuring Adjustment
Ra-5		68K2Terminals	Batt. Check Adjustment
<u>Resistors</u>			
R-1	Chip Resistor	51K (36, 100) K1/16W	Offset Adj, photmetry IC
R-2	Chip Resistor	10K	Vr Adjustment
R-3	Chip Resistor	47K	Vj2 Adjustment (Vr side)
R-4	Chip Resistor	180Ω	LED Current Limiter, F-LCD
R-5	Chip Resistor	6.2K	Vspot Adjustment (Vr side)
R-6	Chip Resistor	43K	Vspot Adjustment (Vs side)
R-7	Chip Resistor	10K	Vave Adjustment (Vr side)
R-8	Chip Resistor	43K	Vave Adjustment (Vs side)
R-9~10	Chip Resistor	10K	REWIND Pull-Down
R-11	Chip Resistor	1K	P-LED Current Limiter
R-12	Chip Resistor	6.2K	P-Tr Load
R-13	Chip Resistor	47Ω	Voltage Booster
R-14	Chip Resistor	51K	Voltage Limiter
R-15	Chip Resistor	6.2K	Voltage Limiter
R-16	Chip Resistor	1K	Vdd (Start)
R-17	Chip Resistor	750Ω	Self-timer LED Currentlimiter
R-18	Chip Resistor	120K	CHS Pull-Down
R-19	Chip Resistor	47K	HLT Pull-Down
R-20	Chip Resistor	47K	Shutter Release Current Limiter
R-21	Chip Resistor	47K	Shutter Release Pull-Up
R-22	Chip Resistor	300Ω	LED Current Limiter
R-25	Chip Resistor	36Ω(33, 39)Ω	ST-Mg1 Constant Current
R-26	Chip Resistor	1K	ST-Mg1 Control
R-27	Chip Resistor	1K	ST-Mg2 Control
R-28	Chip Resistor	36Ω(33, 39)Ω	ST-Mg2 Constant Current
R-29	Chip Resistor	120K	CPU Reset, Pull-Down
R-30	Chip Resistor	120K	CPU Oscillator
R-31	Chip Resistor	1K	F-Mg Charge
R-32	Chip Resistor	100Ω 1/4W	WIND Y Control (1/8W Acceptable)
R-33	Chip Resistor	100Ω 1/4W	WIND W Control
R-34	Chip Resistor	100Ω 1/4W	REWIND 2 Control
R-35	Chip Resistor	100Ω 1/4W	REWIND 1 Control
R-36~37	Chip Resistor	10K	WIND Y Control
R-38	Chip Resistor	47K	Sub-P.C. Board, A-IC
R-39	Chip Resistor	10K	Reset
R-40	Chip Resistor	0Ω	Pattern Short-Out

SYMBOL		PART NAME	FUNCTION
R-(1)	Chip Resistor	100K	Photometry IC Offset Adj
R-(1)	Chip Resistor	36K	Photometry IC Offset Adj
R-(25)	Chip Resistor	33 Ω	SI-Mg1Constant Current
R-(25)	Chip Resistor	39 Ω	SI-Mg1Constant Current Optional
R-(28)	Chip Resistor	33 Ω	SI-Mg2Constant Current
R-(28)	Chip Resistor	39 Ω	SI-Mg2Constant Current

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TP

1	Rw 2 D6 (IN)	8	W (IN)	15	Motor (W) (OUT)	22	Vdd 1 (IN)
2	BATT (MAIN) (-)	9	Y (IN)	16	Motor (Y) (OUT)	23	Dcc (IN)
3	BATT (MAIN) (+)	10	DB, PRINT (OUT)	17	SF-LED (OUT)	24	Vcc (OUT)
4	Rw 1 D7 (IN)	11	Photo Coupler (+) (OUT)	18	Motor (RW2) OUT		
5	P-LED (IN)	12	Photo Coupler (-) (OUT)	19	Motor (RW1) OUT		
6	SF-LED (IN)	13	Aperture Magnet (+) (OUT)	20	Film Sensor SW (NO)		
7	F-MG (IN)	14	Aperture Magnet (-) (OUT)	21	Vdd (OUT)		

